

alumni
day
issue



Harvard Medical Alumni Bulletin
summer 1968

The New England Journal of Medicine

Established in 1812 as The NEW ENGLAND JOURNAL OF MEDICINE AND SURGERY

Original Articles

- Simulating Hypertension and Adrenocortical Hyperfunction: Their Relation to Cushing's Disease
Lester M. Joseph S. McGuire 539
- Varying Patterns of Subclavian-Artery Injury
John W. Hollingshead, Jr., et al. 546
- Use of Injektive Colloidal Gold in a Case of Axillary Effusion Caused by a Tumor of the Breast
John C. G. Cope, et al. 552
- Pneumonia Intoxication
John C. G. Cope, et al. 555

Case Records of the Massachusetts General Hospital

- Skin Lesions in a Year-Old Child
Malcolm C. Austin 546
- Meeting of the Protein Rising Committee
Career Research in Ten Milliard Dollars
Ten Milliard Dollars
Massachusetts General Hospital

For more than 155 years, The New England Journal of Medicine has played its role in medical circles—reporting the progress of medicine to physicians and medical students throughout the world.



The New England Journal of Medicine

10 SHATTUCK STREET, BOSTON, MASSACHUSETTS 02115

HARVARD MEDICAL
ALUMNI BULLETIN
Vol. 42 Summer 1968 No. 5

JOSEPH GARLAND '19
Editor
25 SHATTUCK STREET
BOSTON, MASS. 02115
PATRICIA A. MOORE
Associate Editor
JOAN F. RAFTER
Assistant Editor
MILTON C. PAIGE, JR.
Advertising Manager
10 SHATTUCK ST., BOSTON 02115

EDITORIAL BOARD

HERRMAN L. BLUMGART '21
ERNEST CRAIGE '43A
PAUL J. DAVIS '63
ROBERT M. GOLDWYN '56
FRANZ J. INGELFINGER '36
JOHN H. KNOWLES, M.D.
JEAN MAYER, PH.D.
JOHN C. NEMIAH '43B
GEORGE S. RICHARDSON '46
J. GORDON SCANNELL '40
HOWARD B. SPRAGUE '22



ASSOCIATION OFFICERS

OLIVER COPE '28, President
JAMES M. FAULKNER '24, President-Elect
WESLEY W. SPINK '32, Past President
BRADFORD CANNON '33, Vice President
WILLIAM W. BABSON '30, Secretary
CARL W. WALTER '32, Treasurer

COUNCILORS

HENRY F. ALLEN '43A
JAMES A. CAMPBELL '43B
EDWIN F. CAVE '24
CARLETON B. CHAPMAN '41
JOHN B. HICKAM '40
JOHN C. NEMIAH '43B
JOSEPH STOKES, III, '49
WILLIAM R. WADDELL '43B
CLAUDE E. WELCH '32
LEONARD W. CRONKHITE, JR., '50
*Representative to
Associate Harvard Alumni*

LANGDON PARSONS '27
Director of Alumni Relations

DOROTHY A. MURPHY
Associate Director

CONTENTS

ALUMNI DAY WELCOME	2
by Langdon Parsons	
CHANGE FOR CHANGE'S SAKE	6
by Sidney S. Gellis	
A VIEW OF THE PLACE OF BEHAVIORAL SCIENCE IN THE CURRICULUM	10
by Oliver Cope	
NOT FROM A CURRICULUM	13
by J. Englebert Dunphy	
THE PROBLEM OF DELIVERING PATIENT CARE	17
by Leland S. McKittrick	
THE STUDENT BODY THEN AND NOW	20
by Robert J. Glaser	
BASIC SCIENCE IN THE MEDICAL CURRICULUM	23
by Ralph M. Steinman	
COMMUNITY HEALTH ACTIVITIES	
IN THE CURRICULUM	26
by Henry S. Kahn	
INTERNATIONAL HEALTH ACTIVITIES	
IN THE MEDICAL SCHOOL CURRICULUM	29
by Edward R. Shapiro and David A. Rottenberg	
MEDICAL EDUCATION AND ITS EFFECT UPON SOCIETY	34
by Calvin H. Plimpton	
REUNION REPORTS	38
CLASS DAY	42
VALEDICTORY	43
VARIETAS	44
by Robert Wittes	
KANT, CAN'T, CANT	46
by Daniel D. Federman	
SOCIETY, SURGERY, SERIATIM	50
by Francis D. Moore	
EDITORIALS	56
PROMOTIONS AND APPOINTMENTS	58
INTERNSHIP LIST	60
ALONG THE PERIMETER	63
ALUMNI NOTES	70
LETTERS	75
BOOK REVIEWS	76
DEATH NOTICES	77
STANLEY COBB	78
JOSEPH B. PHILIPSON	80

COVER: Oliver Cope '28, new president of the Harvard Medical Alumni Association.

CREDITS: Cover designed by Steven B. Block. Photographs: William H. Tobey, pp. 2-35, 42-49; Bradford F. Herzog, 52, 60, 69 (Dr. Finland); Fabian Bachrach, 65. Page 36, poems by Emily Dickinson, reprinted with the permission of Harvard University and Amherst College.

The opinions of contributors to the Bulletin do not necessarily reflect those of the Editorial Staff.



Alumni Day Welcome

There are holes in the soles of the shoes

by Langdon Parsons '27

FOR THE SECOND TIME it is my privilege and pleasure, in behalf of the Dean, the Faculty, the Students and Dorothy Murphy, to welcome you to Alumni Day. Five years ago I stood before you with fear and trembling as I shook in the shoes so formidably filled by Tom Lanman. The shoes still don't fit me and I still shake today.

There are holes in the soles of those shoes, acquired in my belabored progress up the hill of higher education. This is not an easy one to climb and I find there are many other foot-steps on this hill. The man who wrote "Boots, Boots, Marching Up and Down" must have had the Harvard Medical School Faculty in mind. The beat has a familiar sound. The reason the upward passage on the hill is so arduous is the fact that the top has a disturbing way of disappearing as more clouds of knowledge obscure the ultimate goal. All the plodders on the hill have a package they would like to deliver to the waiting public. Our problem is how and in what form do we present a package that will be available and acceptable to all.

The last time you were here at reunions the old landmarks were undergoing a profound change. The Countway Library was just beginning to throw off shoots from this new tree of knowledge. At that time we could only wonder what the nature of the foliage would be. Joyce Kilmer once wrote "only God can make a tree." To many this would be enough to discourage any one from trying to construct one. They would be content to leave the old tree alone and let it shed its leaves and fruit in whatever way it chose. Harvard doesn't defoliate as easily as all that.

It is not surprising then that the Dean and Faculty have set about creating a new type of tree. This is no sapling but has sprung, like Minerva, the Goddess of Wisdom, full grown from the brow of Zeus.

We all hope and fervently believe that the spreading boughs will shelter the world from the devastating effect of new and fascinating diseases. Some of them are old diseases with new and more captivating names, but many you may have had all the time and never known it. Were it not for the rapid advances in medicine the newer pathological entities or disease processes could be profoundly disturbing. We can take solace from the success our colleagues have had in overcoming some of the problems that chiseled away at our youthful vigor in the past. Now we realize that the spare parts department of any hospital can easily keep us "forever panting, forever young." For example, if you grow weary at heart you can always go and request a new one. If you find that liquor has not enlarged your horizons as much as your liver you can always borrow one from a pig, and with a few grunts you are back in business.

Dr. DeBakey was recently quoted as saying that it is not inconceivable that we might soon live to be 150 years old. If he had as much experience as many of us have had he would realize that we would not like to be inconceivable over such a stretch of time! There is another question I would like to ask Dr. DeBakey—"What will we do with ourselves in the 90 years following retirement?" We hear a lot about over-population of the world. If our talented surgical and medical friends are not careful there will be more oldsters than babies in the year 2000.

You do not have to be a profound philosopher to realize that the world is changing and medical concepts along with it. Five years ago I told you a story which carried the punch line—"you wouldn't recognize the old place now." At that time I referred to the changing architectural face of the Quadrangle. You still won't recognize the old place, not because of what you see, but what you will hear. The crashing cymbals from the brass section of our new curriculum drown out the softly muted strains of the strings of the old intellectual symphony. The basic melody is the same for it still focuses on the theme of patient care.

This is what we are asking the Alumni to do. Just be patient and care. There are many roads that lead to our ultimate goal of delivering the best of medicine to the largest segment of society at a price they and we can afford. It is not an easy matter to select the one that will produce the maximum results in the shortest possible time. We need your help and guidance and hope that you will not emulate the native who was confronted at a crossroads by an out of state traveler in Vermont. Two signs pointed the way to Hanover, but in completely divergent directions. "Does it make any difference which road I take?" "Not to me" replied the native. The curricular changes about to go into effect do matter to you for they may well change the entire pattern of medical thought. Think of all the leisure time you will have when the electronic brain becomes so successful in motoring bodily functions and reactions that you will be able to find out how the patient feels without even asking him!

Dean Ebert and the Faculty have spent long hours in putting together a core curriculum which the students will prefer to chew on rather than throw away. At times it is a little hard to know just what the students and Faculty really do want. In fashioning the new curriculum you would be correct if you suspected that there has not been one hundred percent agreement as to what changes should be made. It would be a strange Faculty if everyone agreed. At times the Dean in trying to make everyone happy must have felt like the farmer's wife who, as she came up the steps of her home,



25th Reunion



found a cat nursing six kittens. Overcome with nostalgia, but wistfully recalling her experience in trying to raise a family, she finally blurted out "Well, all I can say is that I offered my children just two things in life—mother's milk and piano lessons and they refused both!"

During this period of change the Faculty behaved admirably. Their reaction should be an example to the rest of the world. I am happy to report that there was no organized attempt to storm and take possession of the Dean's office and the word strike was never mentioned.

The students still do not know just what it is they got for Christmas. The most interesting of all the presents inherent in the new curriculum is a fascinating toy they never have seen before. It is called *TIME*. We are assured that it is the ultimate instructional aid to education. The Curriculum Committee borrowed the idea from the advertisements of *TIME* magazine. The more you need to know, the more you need *TIME*. From a doting grandparent's point of view it will be interesting to see what they do with it and what the effect will be on the future of medicine.

It is not enough to present the students this most precious gift of time. We have the frightening obligation of making it possible for the student to get the maximum benefit from the reprieve from standardization we have offered him. The new horizons now available to him must be painted in broad strokes with the emphasis on imagination. The student of today is vitally concerned with social factors and the role that medicine should play in dealing with them. The public have profited enormously from the advances in scientific knowledge and from the better understanding of the mechanisms of disease processes. To make these advances available to all, not just a small section of society, we must apply the same scientific approach that has been so effective in understanding disease. Today we have as many ills that affect our social structure as the individuals that go to make it up. So you will find in the new curriculum elective courses that center on community problems. If our students are to

assume effective leadership, they have must the opportunity to deal with them. The concept of the medical school moving out of the cloistered confines of the Quadrangle into the stormy area of community health will require considerable thought and planning. As Dr. Ebert has said, "Reform is painful and frequently slow, but reform must come." You can be sure the graduates of HMS in the future will be called upon to play an increasingly important role in this area. If they are to be effective in carrying out their commitments they must first have been exposed to the problems and have had some experiences in dealing with them.

The program for this Alumni Day is directed toward a discussion of what the curricular changes will mean to the student, the medical profession, the teaching hospitals and the community. You will be particularly interested in hearing of some of the experiences the students have had in working in areas of medicine which were never considered in our medical school days.

The changing trends of medicine pose a challenge to the medical school in another direction. If Harvard Medical School is to go forward and not simply struggle to maintain its reputation as the leader in medical education it must expand its horizons. To do so we place a considerable strain on our resources. No one ever considered Harvard a disaster area, financially, but rarely has a school owed so much to so many. Running a top notch medical school is big business in the most extravagant sense of the word. If a large corporation found itself in the squeeze of rising costs and diminishing income, it would look around for another group and create a merger. Who does Harvard look to? The only other big business partner who might have the temerity to take us on would be the United States Government. As in most mergers our new partner would insist on changing the name of the corporation. We, as graduates, would then gather on Alumni Day, as Alumni of the Goverment School of Health and Welfare, Harvard Division. I can just picture Dorothy Murphy slaving to make arrangements for the enthusiastic

Class Dinner



group of graduates who would rush in from all parts of the country and the world to join the happy throng on that day! What a frightening prospect to contemplate.

Harvard never has, and is not now ready, to fall into the trap of government control. It still champions free enterprise. The only trouble is it isn't exactly free and the Medical School is an enterprise. And so to make some effort to balance our budget, without printing more diplomas, we have been obliged to raise the tuition to \$2,500.

The decision to raise the tuition was not an easy one for the Dean to make. He knew it would be unpopular. He must have felt like the old dowager who was called up before the night court because the arson squad accused her of burning down the hotel she lived in. The Judge charged her with three offences: being drunk; being disorderly; and wilful destruction of property, to wit, smoking in bed and burning the place down. She was asked if she had anything to say in her own defense. "In the first place, Judge, no one ever accused me of being drunk. In the second place I have never been disorderly and in the third place, and for your information, Judge, that bed was on fire when I got in it!"

It is a startling fact that five years ago we talked of raising the tuition to \$1,750. At that time the cost of a single student was \$3,200 per year. Today with the same items included it is \$4,700. For a married student without children, living on a diet of TV dinners it is \$6,200.

It is not surprising then to learn that over 60 per cent of our student body required some form of financial aid, either scholarship or loan. Last year we made available \$357,000. in scholarships and \$417,000. in loans. In view of the increase in tuition, the projected requirements for scholarships next year will be \$488,000. A similar amount will be needed for loan assistance. This is nearly one million dollars.

It has been our objective ever since the successful completion of the Program for Harvard Medicine, to have the Alumni responsible for the Scholarship Aid program. Last year, by vote of your elected council, the sights for the

Annual Giving Fund were set at \$400,000. They did not expect that the Alumni would be able to do this in a single year for it meant doubling the amount that you had contributed last year which was our biggest year on record. The total was \$219,000. To me this was a magnificent achievement and I congratulate you on your expression of loyalty! This year your achievements look even brighter and with some good fortune we may reach \$250,000. The \$400,000 figure appears to be astronomical but I recall the Chinese Proverb that "A journey of a thousand miles begins with one step."

When you consider that the average gift of slightly over fifty dollars is approximately the same as it was when the Alumni Fund started sixteen years ago it doesn't take much stretching of the imagination to realize that the \$400,000 figure could be reached without putting any great strain on any Alumni exchequer.

The approach to the Alumni Annual Giving Fund will never follow any other pattern than one of voluntary contributions, nor do we choose to tell any one how much they should give. I would like to appeal, however, not only to your loyalty but to your good judgment. If the magnitude of the need is recognized and if you will consider it as important as we all know it is, then I feel that we can meet this goal. If we do not accept the obligation of maintaining the scholarship program the only other alternative is government support. I suspect that none of you want to have the School so dependent on Uncle Sam that we cannot be free to fashion our own pattern of medical education. None of you want to see the cost of medical school education rise to the point that the opportunity of considering medicine as a career cannot be considered by the less opulent members of our society simply because it takes so long and costs so much.

I would like to see the Alumni dedicate themselves to the objective of making it possible for all able and qualified students to obtain a Harvard Medical School education, regardless of their ability to pay.



Change for Change's Sake

by Sidney S. Gellis

WHEN Lang Parsons invited me to be the Moderator of this morning's session I was pleased until I heard the subject of the day—medical school curriculum. He must have been turned down by wiser people before approaching me, proving the truth of the old Adage "A friend in need is a ----- pest."

At any rate my reluctance stems from the stress produced by involvement with too many committees hell-bent to change the curriculum. I left Harvard just as the great new curriculum change was entering into heated discussion. I became entangled in the new curriculum of Boston University School of Medicine, including the six-year plan, and I left that school hoping for respite, only to run into the enthusiastic curriculum committees at Tufts University School of Medicine which may well be striving for a four-year elective. The day is not far distant when medical students from Boston, striking out into all parts of the world in pursuit of their studies will arrive here for the Dean's welcoming handshake and disappear to return four years later to say farewell and receive their diplomas.

Curriculum committees put me in mind of the now famous graffiti found in a New York subway where one scholarly type had inscribed on the wall "Christ is the answer"; someone else passing by wrote underneath, "What was the question?" So it is with medical school curricula—we seem to be aiming for answers before studying the questions.

I have no idea what approach our speakers will take this morning but I have made no bones about mine, having suggested my opinion in the title of my talk. I grow increasingly convinced that new curricula to a large extent may

result only in change for change's sake. I suspect that curriculum committees seek improvement in medical education by means which will not prove markedly successful in achieving their goals.

We hear constantly of vertical structuring of the curriculum, horizontal structuring and integrated curriculum. These are getting to be old-fashioned: the newest approach is the establishment of channels supposedly enabling the student who is to be a practicing physician to begin his career after one or two years of his medical school program and permitting the investigator to start his drive for a Nobel Prize after a short period out of college. In the *New York Times* of May 5, 1968 the Dean of the University of Pennsylvania School of Medicine is trying to beat us all out by announcing, that his school "the nation's oldest, is shelving traditional curriculum and is instituting a highly individualized course of study that will enable each of the 500 students to tailor a course to his own particular goal." The Dean goes on to say that, "rather than committing ourselves to educating a particular type of doctor or offering students a selection of three or four 'track' curricula, we have chosen to make possible for the individual student to decide early . . . what area of medical education interests him the most. . . by giving him the option to choose from what may be the broadest selection of courses offered by any medical school, each student may set his own personal goal in medicine." I'm sure the good Dean means to control things more tightly than *The Times* article suggests, but I am left with the conclusion that the only way we'll beat him out is to aim for a still broader plan and allow our students to stay home and mail in

Teaching faculties need to be changed



their tuition fees.

I have no basic argument against curriculum change—of course change is needed. We must correlate basic sciences with problems in the human. All too often the highly motivated student loses his enthusiasm for medicine because he moves from a science major in college to a Ph.D. type of program in medical school. Our old curricula have been packed with hours wasted on technics and on subject material which should be left for hospital training. Too much of the so-called clinical years were designed to make certain that every subspecialty received equal time to enable entrapment of the student into an internship in that specialty. Insufficient time was left for electives. All of us here I think will agree that these faults have existed.

What are we actually trying to accomplish in medical education? First we want to teach students medicine in its broadest and most basic sense, getting across not only the science of medicine but the humanity of medicine. We want to inculcate into the student the wonder and excitement of the human mind and body in health and disease. We must inspire the student to remain a student the rest of his life, so that his education will not stop with the end of his formal training period. We want him to be logical and scientific, not just a bottle into which the faculty pours facts.

How do we accomplish these goals? By tying up faculties all over the country in unceasing toil at curriculum revision? I think not. We do need changes in our curriculum, but much more vital is the need for changes in our teaching faculties. I submit that if you will bring together a highly intelligent group of young students and a faculty that likes young people,

enjoys teaching and has the spark to excite and arouse the student, the method of teaching and the exact content or structuring of courses are relatively unimportant.

When we submit papers to scientific journals we expect that they will be reviewed, criticised, accepted or rejected by critical scientists. Must we not be willing to subject our teaching to criticism and review by our peers? Is it fair to the student for him to endure hours of lectures by a faculty member who is precociously senile? Can we expect enthusiastic teaching from a full time member of our staff who, according to his grants, must devote 90 percent of his time to research, and who knows full well that his academic progress will be determined by his research production, not by his teaching? Should not our investigators be rewarded for excellence in teaching in their academic advance? This indicates the great need for direct support for teaching, since by our funding practices, too many of our medical schools have become research institutes and have forgotten their primary charge, the teaching of medicine. Would our faculties not accomplish a great deal more by cancelling out their curriculum committee meetings and spending that time reviewing our courses for the purpose of recommending changes in faculty teachers? Should we not decide that students who go into practice, teaching, research or administration can have no shortcuts in medicine but must all go through a broad basic training first? If we must have shortcuts in medical education because of public needs, should we give these accelerated, narrowly educated "specialists" the old and honorable title of physician?

The prosecution rests.

Philosophy of Curricular Change at the Medical School



by Dean Robert H. Ebert, M.D.

THERE ARE those who look upon curricular revision as an emotional escape for medical school deans who are beset by financial problems and unstrung by the administrative tangles of modern medical schools. It is their dish of tea, or in the modern vernacular perhaps "pot" is the better word; it is what turns them on. I would not wish to deny these allegations and would only observe that there are worse vices—at least I think there are. There are other and better reasons for curricular change at Harvard and I should like to explain some of the reasons and how they relate to the philosophy of change which is about to take place this fall.

The reasons for change are not necessarily universal for all medical schools, therefore I am speaking particularly to the problems of this Medical School.

There are a number of facts that bear upon what we teach, how we teach it and who teaches it. First, the majority of students entering the Harvard Medical School today have had a far better educational experience in college than did their counterparts of even a decade ago, and a few have had a superb education.

Dr. Daniel Funkenstein has made a detailed study of this, examining the backgrounds of students coming into the School over the last twelve years, and it is quite clear that the way in which students are prepared is changing.* But the way in which we choose our students has not changed. A few years ago, I resisted the suggestion that we ought to change the makeup of the Admission Committee so that we could have a controlled study. We have today essentially the same Committee, they are people in the practice of medicine; people who know what doctors do.

Yet there has been a significant change in the educational background of students coming to the school. Whatever their major area of concentration in college all have taken advanced or graduate science courses and their background in modern science is of a very high level. Seventy-five per cent of the entering class majored in science; many in the physical sciences. It is of particular interest that about 20 per cent of last year's class had majored in physical chemistry, physics or mathematics—in contrast to about three per cent a decade ago—and an increased number majored in the social sciences. About four per cent of this year's incoming class are social science or psychology majors. One must realize, therefore, that these excellently prepared students expect a great deal from their educational experience at the Medical School.

There has been a virtual disappearance of the premedical course of study; last year there was not a single student who taken a regular premedical course. Additionally, there has been a deliberate attempt on the part of the Admission Committee to choose students with different educational experiences and widely different outside interests. In this way we get a mix of people—many of whom have done extraordinary things.

One has to be very careful in talking with HMS students these days because it is all too easy to find one's self trapped into giving advice to people who could clearly give you advice. I was talking with a young man the other day who came to discuss writing a book and wished to take a year off to do this. I thought it sounded like an interesting idea, but I attempted

* "Changing Pool of Medical School Applicants," by Daniel H. Funkenstein, HMAB, Summer 1967.

Students no longer need to be exposed to every aspect of medicine

to give him some advice as to how he might first learn to write a book. Slowly, in the course of the conversation, it came out that he not only knew how to write a book but had written six or seven. He had sold the rights of one to the movies, and for the book he was telling me about, he had already been approached by The Harvard Press, Harper and Row and the Athenaeum. With a contract in hand, I suggested that if he were to take a year off he might need some money, but he said "No" because the publishers were going to give him a \$7,500 advance. It becomes a dangerous business to give advice.

The point I wish to make is that we have students with a variety of talents—talents not always associated with either premedical or medical students—we should not assume, therefore, that identical preparation in medical school will necessarily fulfill all their needs. We recognize that they will choose different careers in medicine; they are not all going to do the same thing, nor do we expect them all to have learned exactly the same thing.

Medical schools today represent only a part of the formal education of the physician, and no student graduating from this School plans to practice immediately, or even after internship. No longer need one be overly concerned, therefore, about exposing the student to every aspect of medicine in order for him to be immediately ready to practice his art and science. He will undertake three or four years of post-doctoral education during which time we will learn many practical skills.

There is another point I would like to make. Today the departmental structure in the preclinical sciences no longer represents in each department precisely that body of knowledge that the student needs to have. There has been a blurring of lines between these departments; there is no longer a rigid separation of disciplines. The array of talent that we have is widely spread through many departments, and because of this, we need to bring people together from various departments to teach what we think basically should be the core curriculum.

I am not going to describe the curriculum in detail,* but only mention those areas which we think are important and how they have been divided. The first part is cell biology, which will include parts of biochemistry; a good deal of what is now microbiology or bacteriology (which has more to do with the problem of cell biology than it does with bacteriology as it relates to the clinic); some general pathology; and a good deal of what in the past has been taught as histology.

These are areas that all come together in the framework of modern biology and can be taught in a very exciting unit.

The next portion of the curriculum spans the basic science area and is broadly covered under the term human biology. It is an attempt to correlate those aspects of cell biology, physiology, pharmacology, and pathology with the study of human disease. This is an extension of what has been very successful with the teaching of pathophysiology, and is a course that does make science relevant to medicine.

Running parallel to this we hope to introduce more teaching in the behavioral and social sciences. I think this is the most difficult area of all in terms of how it is to be taught, but there is considerable interest on all sides in teaching those parts of these sciences that are relevant to medicine.

I don't expect the clinical teaching to change greatly, except that we may require less, in order to fit our curriculum to the varying plans of students so that they can pursue areas of their own particular interest. I would anticipate, however, that the clinical background the student receives will not differ very much from what it is today.

What of the philosophy of electives? This is not meant to be a smorgasbord from which the student picks anything he likes, but rather it is meant to give intensive courses in one or another of the basic sciences in order to do two things: one, to supply the opportunity to fill gaps in the knowledge that he may have as a result of his experience in college or in the core curriculum; and two, to extend for the individual student his knowledge in areas of special interest.

The intent of these curriculum changes is to be responsive to the varied backgrounds of the students and their varied career goals, while simultaneously providing a firm foundation in the biological and clinical sciences, as well as the behavioral and social sciences.

Because we will be critically examining how the curriculum is taught, I think it will be a better educational experience than has existed before, even though the time in which the student gets what is required will be compressed. There will, however, be more time for the student to pursue those areas of his own special interest. We also hope to provide an opportunity for examination prior to course work so that a student need not take a course in which he can demonstrate competence. There will be the opportunity for the uncommitted student to have a very wide range of experience, and the chance for the committed student to pursue in depth his own particular interest. One thing is certain: the curriculum will continue to change and continue to evolve.

* HMAB, Spring 1968, pp. 11-15.



IT IS FASHIONABLE these days to be changing the curriculum, and from what Dr. Ebert has just told you, we here at Harvard are certainly in the height of fashion. The development of Harvard medicine has been sound, and solid, and prodigious. Yet, the ferment regarding medical education has not perhaps been as acute since the days of President Eliot. What is happening?

We are being criticized on all sides, and we are criticizing ourselves. There are many reasons for this questioning and criticism. The whole educational program, from kindergarten through graduate school, is undergoing an evolution. The medical school phase is changing to take advantage of the student's preliminary education. But there are also additional reasons. And with one in particular I will deal.

Our current medicine is criticized as being cold and impersonal. That is bad, for impersonal medicine ignores the values upon which our civilization stands, and it shows that we are blind to the emotional factors in part responsible for many of our common diseases.

Let me give you an example. When I see a patient with Graves' disease, is it good enough that I cut out his goiter, or that a thyroidologist burn it out with radioactive iodine?

Can we say that we have done a good job when down underneath we know that the disease stems in no small measure from an unresolved emotional conflict and that that conflict will live on to trouble the patient in another way?

The same question could be asked regarding our treatment of a young man with a duodenal ulcer. We may tide him over his trouble with drugs or an operation, but if he is not helped with his emotional problems, these same troubles will continue to divert his energies always with the threat of a recurrence of his ulcer.

Many of the ills that beset us, and for which our services are needed, stem from common emotional problems. We don't really need to belabor this, do we?

Medicine has not always been impersonal

The great figures of medicine of the nineteenth century had an earthy respect for the whole person. Our own teachers here at Harvard in the first decades of this century urged upon us attention to the personal aspects of our patients. If our medicine today is impersonal, how has this come about?

The history of the Class of 1928 will show us something of how this has happened. Our clinical teachers kept telling us, "Pay attention to the patient and forget that science stuff." But we thought we knew better. We were able to discern deficiencies in the knowledge of these clinical teachers. The facts of science that we had obtained from Cannon, Folin, Zinsser and Gamble enabled us to see gaps in the knowledge of our clinical teachers—gaps which, if filled by a better understanding of contemporary science, would have made their medicine more certain.

Clinical observation seemed vague and uncertain and scientific understanding accountable and solid. We were, therefore, easily persuaded that the scientific path was the best way for medicine, and we denigrated that care which depended upon clinical observation alone unsupported by quantitative measurement. All but a few of us left the emotional aspects of our patients to care for themselves.

A View of the Place of



A member of the Class of 1828 would not have made our mistake. He had no laboratory and no X-rays. He depended upon what he could see, feel, smell and hear, and no little upon his intuition. He saw disease as it affected the patients, and he was aware that an illness was often emotional, as well as physical.

This was the time when Parry of Bath was lecturing on patients suffering from the disease described ten years later by Graves of Dublin. Both Parry and Graves recognized the emotional instability present before the development of goiter and exophthalmos. Graves referred to it as hysteria.

During the course of the century, anatomic pathology came into being, followed by bacteriology and the chemical phase of medicine. By 1900, the physician had many tools to guide his judgment and help his therapy. X-rays appeared to strengthen his hand.

It is understandable, therefore, why Flexner in 1910 urged upon our educators the development of chemistry, biology and physics as the underpinnings of medicine.* The tremendous upsurge of scientific knowledge that followed was no surprise. It changed our view of Graves' disease as it changed our attitude toward disease as a whole. Osler had written in 1892, "Worry, fright and depressing emotions precede the development of Graves' disease in a number of cases," and as late as 1907, Dock, writing the chapter on thyroid in

Behavioral Science in the Curriculum

by Oliver Cope '28

Ills that beset us stem from common emotional problems

Osler's seven-volume text, said under treatment "mental rest is just as important as physical." But, as the knowledge of the intermediary metabolism of iodine developed, this point of view disappeared into the background. The incoming tide of biochemical understanding overwhelmed the earlier view of the origin of Graves' disease by providing prompt relief of the complicating hyperthyroidism. Although several psychiatrists from 1920 to the present have written extensively about the character structure and emotional problems of the patient who develops hyperthyroidism, for the most part physicians caring for these patients now ignore totally the vagaries of the mind—the behavioral side of the patient. Nobody, but nobody, uses the psychological component in the treatment. The standard treatment is by one or another form of thyroidectomy, surgery, irradiation or drug.

* Humanist though he was, Flexner did not pick up the possible role of behavioral science in medicine. In his report of 1910, he mentioned the word "psychology" only once: "[The physician] handles at one and the same time elements belonging to vastly different categories: physical, biological, psychological elements are involved in each other."

In regard to the need for a cultural education, he wrote: "So far we have spoken explicitly of the fundamental sciences only. They furnish, indeed, the essential instrumental basis of medical education. But the instrumental minimum can hardly serve as the permanent professional minimum. It is even instrumentally inadequate. The practitioner deals with facts of two categories. Chemistry, physics, biology enable him to apprehend one set; he needs a different apperceptive and appreciative apparatus to deal with other, more subtle

Should the original observations of Parry and Graves have been abandoned so lightly? I should like to tell you something of the experience using psychotherapy in the treatment of Graves' disease. I could cite 64 such cases.

I have here the case report of a twenty-six-year-old man whose hyperthyroidism just blew up out of an automobile accident in which he was not injured. Then, here I have the story of a social worker, aged forty-eight, with an alcoholic husband. At the age of forty-four, under the distressing need to divorce him, she developed acute goiter and exophthalmos of the right eye only. These were cared for by RaI and orbital decompression. She was well for four years when she found that her only daughter was about to marry an alcoholic, a man who was the image of her father, and the patient suddenly felt the beginning protrusion of her left eye.

Then, third, I would like to tell you about a teacher, whose Graves' disease blossomed out after a frightening incident with a young man. She felt that he was assaulting her, and though he probably was not, she was so frightened she became hysterical. The next day the Graves' disease was already obvious.

She was brought up as a devout Catholic. Men were a problem. Her father and mother were divorced when she was an infant. She was a problem to her mother and was disowned by her. She was brought up by an aunt. Later she went to a convent school and to a Catholic college—both under the strict discipline of nuns.

Out on her own, trying to establish herself as a teacher, she was unable to make any friends—man or woman.

Because of a desire to avoid operation or RaI, she accepted treatment by psychotherapy alone. With the collaboration of the church, she underwent psychotherapy. She had a difficult time, but at one point suddenly became aware that all her life she had been frightened. She relaxed and was able to share thoughts with her friends. Her eyes receded; her hyperthyroidism disappeared; and her goiter has almost completely gone. Not only has the Graves' disease been managed, but she feels that she now has a life ahead of her.

I look at the genesis of Graves' disease as follows. There are multiple factors or contingencies. Sex is a factor. Since the disease tends to run in families, there is probably a genetic contingency. If not genetic, there are presumably

elements. Specific preparation is in this direction much more difficult; one must rely for the requisite insight and sympathy on a varied and enlarging cultural experience. Such enlargement of the physician's horizon is otherwise important, for scientific progress has greatly modified his ethical responsibility. His relation was formerly to his patient—at most to his patient's family; and it was almost altogether remedial. The patient had something the matter with him; the doctor was called in to cure it. Payment of a fee ended the transaction. But the physician's function is fast becoming social and preventive, rather than individual and curative. Upon him society relies to ascertain, and through measures essentially educational to enforce the conditions that prevent disease and make positively for physical and moral well-being. It goes without saying that this type of doctor is first of all an educated man."

other somatic contingencies. Then come the central nervous system factors, and I look at these in a simple way. These are the background and trigger mechanisms. I do not see anything specific about them. There are all sorts of backgrounds and all sorts of trigger mechanisms. So many and so diverse are they that it is unwise at this stage of our knowledge to try to group them and generalize.*

What I have been saying about Graves' disease is not original with me. It was Stanley Cobb who pointed out that we in the Thyroid Clinic must heed what psychiatrists know about these patients. It was at lunch in 1943; I remember it vividly. We were talking about the psychologic phenomenon of acute grief that had been observed in the victims of the Cocoanut Grove disaster. He had told me about this a year earlier, but somehow I had blocked it out and, a little irritated with me, he pointed out how I had perhaps deliberately forgotten. Until that moment I had not been properly aware of how we can deliberately forget things. Dr. Cobb followed this by saying, "By the way, it's high time that you in the Thyroid Clinic should pay attention."

At first I didn't understand what he meant. The emotional problems that beset patients with hyperthyroidism seemed to me to be the everyday problems of people. It took me some time to grasp that these seemingly everyday problems had special meanings. It has taken time for our psychiatrists to teach me, but now I have learned to help the patient tell me the rudiments of the trouble. I am not a specialist; I have no specific knowledge; and I am not able to ferret out the finer details. The problems require the professional capacity of the psychiatrist. What he finds becomes the means of helping the patient to make a needed adjustment.

There is growing physiologic evidence to bear out the theory long held by the behavioral scientist regarding Graves' disease. The hypothalamus is recognized as the governor of thyroid function. Nuclei of the hypothalamus are now known to secrete a substance called thyrotrophic releasing factor, which is collected by Wislocki's portal-hypophyseal circulation and carried to the anterior pituitary where it stimulates the cells secreting the thyroid stimulating hormone. The TSH is in turn carried to the thyroid and more hormone is secreted. Although the feedback of thyroid hormone upon the anterior pituitary may exist, it is now probable that the more important feedback lies in the hypothalamus. The triad of hypothalamus, anterior pituitary and thyroid may be viewed essentially like the Honeywell apparatus, the wires and ducts, and the furnace in the cellar. In many cases of hypothyroidism, the Honeywell gadget is turned down so that the room temperature falls to 50°. In Graves' disease, the gadget is turned up so that the temperature of the room rises to 90°. The important question is, what turns the gadget up or down?

Experimental neurologists believe that the control of the gadget lies in the limbic system, which includes the amygdala and the hippocampus. Emotional instability in the patient is associated with derangement of the functional control of these nuclei over the hypothalamus. This last

* Indeed, psychiatrists have perhaps gone too far in trying to identify specific psychologic situations which give rise to specific somatic quakes and upheavals. The same kind of psychologic mishap in one patient may give rise to exophthalmic goiter and in another to peptic ulcer. Indeed, the same situation leads to no somatic disturbance in the majority of people. Other contingencies determine if anything at all happens, and if there is an upheaval, which kind.

part of the concept is uncertain, but it lends credence to the original psychiatric idea of the emotional component of the disease, and suggests that the emotional concept may eventually be underpinned by biochemical understanding as secure as the formation of the thyroid molecule itself. It may be some time before such knowledge becomes available, and in the meantime the patient has to be treated. It's the best approach to treatment, the most comprehensive that we have thus far, and is to be used pending the evolution of some better knowledge.

Stanley Cobb pointed this all out to me twelve years ago. He wrote about it in his article, "Awareness, Attention and Physiology of the Brain Stem," and there has been much work since then to confirm it.

The reason that the thyroidectomy treatment is not sufficient is that it leaves the fundamental imbalance of the patient unattended to and the patient, therefore, prone to further troubles. The more I have seen of patients with Graves' disease, the more I am impressed with the troubles they have encountered beforehand or lived to encounter later, once the hyperthyroidism has been brought into abeyance by thyroidectomy. Viewed from the total context of the patient and the patient's society, thyroidectomy in any form, therefore, is an inadequate therapy.

This view of the emotional etiology of Graves' disease also explains many things about the disease. First, it explains why drug therapy is 50 per cent successful after two years and 50 per cent unsuccessful when the drug is omitted before that time. The trigger mechanism that precipitated the disease in many patients passes in its intensity with time so that, when the drug is omitted after two years, the stimulus is no longer present and the disease does not recrudesce. On the other hand, if the trigger mechanism is still present in that patient's home, surroundings, family business, then the disease recrudesces, re-emerges with all of its primary intensity. If this could be appreciated by our physicians and attention paid to the stimulus, then the drug therapy, instead of being 50 per cent effective, should approach 100 per cent effectiveness.

I do not say that attention to the overactivity of the thyroid gland is unimportant. This would obviously be absurd. The very emotional imbalance that exists prior to the development of the hyperthyroidism is like a smoldering fire which is then fanned to flame by the hyperthyroidism. The hyperthyroidism must be brought into abeyance as promptly as possible, and the patient will then be helped in a controlled circumstance to unfold his primary difficulty. It should also be stressed that it isn't possible with every patient to solve the emotional imbalance, and thyroidectomy is left as the only effective, even though incomplete, therapy. Of the 64 patients examined for the feasibility of treatment by psychotherapy, in 18 there was no hope of bringing about a significant readjustment. In many, the readjustment has been incomplete, but in 12 patients I would like to emphasize that the effectiveness of psychotherapy was so prompt that antithyroid drugs were not needed.

What I have said of Graves' disease would be equally true of Cushing's disease. I could also have used peptic ulcer as an example of a condition in which the physician's attention is riveted upon the stomach and duodenum with failure to take into account the cephalic influence over gastric secretion.

Why should this imbalance between hard science and the

behavioral aspects of the patient have developed? Why is it hard to keep both points of view in mind? The biochemical and biophysical underpinnings of medicine have so enhanced the doctor's effectiveness that it is easy to see why we have been so preoccupied with them.

A wilful neglect

Unfortunately, there is something more than mere infatuation with hard science which prevents the clinician from being interested in the emotional aspect of the patient. It is a more active neglect, a wilful neglect.

How many clinicians have paid attention, how many are aware that the intensity of hyperthyroidism is influenced by the same physical phenomenon that governs the egg-laying of the common domestic hen and the spawning of trout? In 1948 Morgans and Trotter described the seasonal variation in hyperthyroidism and identified the increment and decrement of daylight as the cause. This biophysical fluctuation has been repeatedly called to the attention of the thyroidologists, but few have realized its significance. Yet, here is a most direct clinical finding, tying brain to thyroid function and disease.

I should also point out that all of the experimental and clinical studies regarding the control of the thyroid by the brain have been carried out not by those internists and surgeons treating the patients, but by experimental neurologists.

If this is the attitude of the practicing physician toward behavioral science, what chance has the student whom he teaches? Surveys of more than one medical school have shown that the students enter with an open mind regarding the behavioral aspects of medicine. Something happens to them during the course of the four years. They are more hardened and cynical than when they entered. They begin their internship with a disparaging view of the emotional troubles of the patients.

The tools of psychologic medicine are elusive. The weight to be given one thought compared to another is difficult to determine. Misjudgments are easy. It is understandable that the intern and resident who must avoid mistakes at all costs, being young and uncertain, should turn to the reliable, quantitative, hard sciences.

The reverse is also evident. Some of the doctors who choose early to go into psychiatry may do so because they are less well-grounded and effective in the hard science aspects of medicine. They disparage the coldness of quantitative science. There is, thus, rivalry between opposing camps.

How, then, do we get the student to look at the whole patient, to combine the hard and behavioral science? Is this a matter for the curriculum?

I have become disillusioned about curricular change. I have twice been involved in major curricular changes here at Harvard. Both times the gains fell far short of the aims, because we changed the curriculum and not the faculty.

Teaching of behavioral science by courses has been attended by uneven success. All who have tried it have found it a most difficult charge. This doesn't mean that the course system should be abandoned. The system needs further experimentation.

My own hunch as to the ineffectiveness of courses in behavioral science is that the teaching has not been related to patient care in a practical way. When the student can hear the patient telling in his own words what brought on the hyperthyroidism and then can see how the psychiatrist is able to elucidate the patient's gross observations in intimate psychological detail, this has meaning to the student.

The student doesn't believe in the saying, "Don't do as I do, do as I say." Quite the contrary, the student heeds how we practice our medicine. He does as we do.

What we need are teachers who are sensitive to the emotional makeup of people, teachers who are interested in this aspect of people, the Oslers and the Peabodys for our time.

Not From a Curriculum

by J. Englebert Dunphy '33

HERE IS no argument about the need for flexibility and more elective time in medical education. We all subscribe to the philosophy presented so well by Dean Ebert. We agree with Oliver Cope that the medical student must have a better grasp of what the behavioral sciences have to offer. Those of us in teaching hospitals are willing to give up required for elective time and look forward with enthusiasm to participating in the earlier years of medical education. It is exciting to teach the young and impressionable. Well-planned, integrated joint exercises can be enormously rewarding but the hazard of an exciting but superficial exposure to the basic sciences must be avoided. Overacceleration of medical education could bring it back to the days before the Flexner report. Despite this risk I am certain that judicious changes will lead to a dramatic improvement in teaching. In fact some built-in acceleration and flexibility are already essential to meet the demands of more and more students who are entering medical school with an advanced background in mathematics, biochemistry and molecular biology.



However, curricular changes alone will have comparatively little effect upon the teaching hospital. No matter what the faculty does to the curriculum the student will survive it. One way or another he will come to the teaching hospital an educated man with broad interests in medicine, who has not yet decided precisely what he wants to do. So rather than pursue the somewhat nebulous effect of curricular changes on the teaching hospital, I feel obligated to call your attention to the real troubles with medical education—troubles which unless they are resolved will only be compounded by curricular change.

Medical education: rigid—sterile—unimaginative— tedious—confusing—repetitious—wasteful

Medical education is said to be rigid, sterile, unimaginative, tedious, confusing, repetitious, wasteful, in short—awful. It is surprising that such bright, able, accomplished, appropriately competitive, critical, and ambitious young men continue to emerge from this dreadful educational morass. What is the reason for our discontent? It is commonly said that nothing has happened in medical education since the Flexner report. It may be helpful, therefore, to take a brief look at Mr. Flexner and his report.

Abraham Flexner was a school teacher. In many ways he was the greatest teacher in the history of American secondary school education. His students were admitted to Harvard College at the age of sixteen, when the average age of entrance from the best Eastern preparatory schools was nineteen. Moreover, Flexner's students from Louisville, Kentucky, were performing so well in comparison with their classmates that they attracted the attention of President Eliot. When the President asked Flexner what he was doing, He said, "It was all very simple. I treated boys as individuals, and I let each go at his own pace. I took hold of people where they were strong, not where they were weak, and having whetted their appetite by success in one field usually succeeded in arousing interest in another. From time-to-time I encountered mathematical or linguistic morons, even among pupils otherwise gifted; for these I worked-out sheer mechanical techniques which enabled them to pass college entrance examinations, and I explained to them precisely what I was doing and why."

Students: bright—able—accomplished—appropriately competitive—critical—ambitious

Despite what he says, Flexner was a hard taskmaster. At one time when he was teaching in the Louisville High School he failed an entire class. Flexner was devoted to excellence. He heartily subscribed to the saying, "We have to defend the country against mediocrity; mediocrity of soul, mediocrity of ideas, mediocrity of action." He operated his school without rules, without examinations, without records and without reports. But he knew his students intimately, and as he himself said, "I relied upon first, enthusiasm; second, cleverness in outwitting students who tried to dodge their responsibilities; third, good humor; and finally emulation and competition."

Mr. Flexner's success came not from a curriculum modeled or remodeled. It came from a great teacher who made his students responsive whether they wanted to be or not. There is no doubt that we need Mr. Flexner in medical education today, but we need him as a model for teaching not as a proponent of curricular change.

Flexner's specific contribution to medical education was quite a different matter. With financial support from the Carnegie Foundation and the approval and help of the Council on Medical Education and Hospitals of the American Medical Association, Flexner raised the curtain on a stage already

set by the profession itself. The change in medical education had already occurred. It was in visible operation at Hopkins, but the forces for change had begun over a quarter of a century earlier with Charles W. Eliot of Harvard, and Daniel Coit Gilman, first at the University of California and later at Hopkins.

Gilman in his Inaugural Address as President of the University of California in 1873, said, "It is on the faculty that the building of the University depends. It is not the site, or the apparatus, or the library, or the Regents that draws scholars. It is a body of scholars, skilled in their specialties, eminent in their calling, loving to teach. Such a body of teachers will make a university anywhere." It was Gilman who set the stage for the greatness of Berkeley. It was Gilman who made the Hopkins a body of scholars. It may be significant that Berkeley doesn't have a curriculum even today and when the Hopkins was first trying to design one Halsted asked only for good teachers and good students.

Long before the Hopkins was started President Eliot had set the stage for the greatness of the Harvard Medical School so that when Flexner made his report we came off fairly well. Not by any means as well as Johns Hopkins or Western Reserve, but despite Mr. Flexner's opinion The School seems to have done pretty well. It may be significant that President Lowell, thanks to Harvey Cushing and others, did not accept Flexner's full-time system in return for Rockefeller's financial support.

In contrast to Flexner's day, what is the situation now?

Where is the new Johns Hopkins? Western Reserve is more a model for improving faculty-student relations and developing enthusiasm for learning on both their parts than for curricular change. Remember at Western Reserve the full-time faculty was increased from 250 to 450 and the new members were recruited primarily to participate in the new adventure. The changes in medical education, hammered out with devoted effort at Endicott House and Swampscott, offer no such universal appeal as did the Johns Hopkins in 1910. Indeed, the very proponents of change cannot agree among themselves as to what should be done.

We all recognize a need for a change in medical education

but our efforts will amount to nothing unless we correct some very basic faults, faults which more than the curriculum account for our present paranoia. The curriculum is being blamed more than it should be to absolve the faculty from doing a poor job of teaching. We are putting the blame on the curriculum rather than on ourselves.

The excellent Boylston paper, by John Wesley '67, published in the Spring issue of the *Harvard Medical Alumni Bulletin* asks for improvement in teaching more than for curricular change. In fact, he is concerned lest change obliterate much that is good in the present curriculum. He writes, "The word curriculum, derived from Latin literally means 'a running' or a 'race course.' It would be difficult to choose a better single word to sum up the experience we have just completed. . . We would not object to a course . . . destined to speed us in the right direction as efficiently as possible. But, we do object to the unnecessary obstacles we have encountered along the way—obstacles epitomized by the surgery rotation at the Massachusetts General Hospital."

It would appear that things haven't changed much in thirty-five years despite all the curricular reforms. If I remember correctly, the teaching of surgery at the Massachusetts General Hospital was a problem when I was a student. Is it not paradoxical that at the very time when Oliver Cope is trying to improve medical education his own department is described as an obstacle to learning? But poor teaching is not corrected by changing the curriculum. It would do no good to route the race course down Storrow Drive. The MGH would move over and block it sooner or later anyway. The answer is not to try to get around the MGH by changing the curriculum but to barge straight ahead and change the MGH. In fact, this is precisely what was done. As Dr. Wesley mentions later in his article, better communication between students and faculty were established, with a marked improvement in the student program.

Now let me tell you the real troubles with medical education. They are four in number: First, the preclinical scientist is being taken away from the student; second, the strict full-time system is taking the clinical faculty away from the patient; third, the pressures of administration are taking the heads of departments away from students, patients and laboratories; finally jet travel is taking everybody away from everybody else.

The preclinical scientist has been taken away from the student by increase in class size, insufficient financial support for the basic sciences, understaffing, underemphasis on teaching, misguided efforts at integrated teaching, too much committee work and, to a limited degree but not to the extent supposed, overemphasis on research.

It is time we stopped giving lip service to the role of the teacher in medicine. Wesley refers to George Erikson in the Department of Anatomy as "a class hero." He writes, "His vibrant phrase, 'Have you been thinking about . . . ,' stimulated students to engage their neurons with subjects which indeed before they had not been thinking about." Dr. Erikson is a great teacher and a modern Abraham Flexner. Unfortunately he is no longer at Harvard.

I remember so well the curricular changes of a decade or so ago at Harvard. Integrated teaching meant that no longer would every student spend two weeks at the laboratory bench with Baird Hastings. Who among you who had this experience does not remember and cherish it. It's probably the only

thing you do remember about biochemistry. It was my opinion then, and it is my opinion now, that two weeks side-by-side with Baird Hastings was worth more than the educational cocktail provided by half-a-dozen participants from six different departments performing before a class of one-hundred and twenty. Rather than merely change the curriculum let us also improve the quality of teaching. Let us find the resources so that the faculty in the basic sciences can pursue investigative work in depth and at the same time have sufficient manpower to provide identifiable student-faculty relations. Let us recognize and promote the Abraham Flexners.

The second thing wrong with medical education is the impact of the strict full-time system on clinical teaching. This is precisely where Flexner was wrong. He thought the full-time system would free the professors from the pressures of private practice so that they would have more time for teaching and research. But instead, they are forsaking the patient for the laboratory. I do not mean that they do not make ward rounds, they do, and in this sense they teach, but they are not teaching from a long experience of personal doctor-patient relations. But this is the very thing Dr. Cope is pleading for, namely a personal understanding of the patient. This is what Sir William Osler did. This is what those of us of an earlier generation learned so well from Sam Levine, Paul White, Joe Aub, Chester Jones, Arthur Allen, David Cheever, John Homans, Soma Weiss and many others. Each of us could expand the list with his favorites. These men had learned the true joy in medicine; the care of the patient as a person. At the bedside they provide student, intern and resident with an essential ingredient lacking in much of medical education today. Indeed, personal interest in the patient is becoming a naughty thing to have in some teaching hospitals, especially if there is a remote possibility one might be paid for this responsibility.

Osler foresaw the unfortunate impact of the strict full-time system on the teaching of medicine. In a confidential letter to President Remsen of Johns Hopkins he wrote: * "The danger would be the evolution throughout the country of a set of clinical prigs, the boundary of whose horizon would be the laboratory and whose only human interest was research, forgetful of the wider claims of the clinical professor as a trainer of the young, a leader in the multiform activities of the profession, an interpreter of science to the generation, and a counselor in public and in private of the people in whose interests after all the school exists."

This indeed is what is happening in many medical centers today. What is worse as the faculty ages, research becomes less original and more routine. Since the care of patients and teaching is a lost capability there is nothing left but committee work, carefully designed to keep those who want to do research, teaching and patient care from doing it. Competence in committee work may lead to a deanship elsewhere.

Osler made a strong plea for independent personalized practice by the full-time faculty. He wrote, "Against the sin of prosperity, which looms large in Mr. Flexner's report, the clinical professor must battle hard. I was myself believed to be addicted to it. But you will be interested to know, and I

* It is fifty-seven years since Osler wrote this letter. All the individuals involved are dead. Several years ago a copy came into my possession. I trust the extraordinary pertinence of Osler's convictions to our present problems will justify my violation in two brief quotations of the confidential nature of this letter.

would like the trustees of the hospital to know that I took out of Baltimore not one cent of all the fees, none of which came from hospital patients, that I received in the sixteen years of my work. The truth is there is much misunderstanding in the minds, and not a little nonsense on the tongues of the people, about the large fortunes made by members of the clinical staff. At any rate let the university and hospital always remember with gratitude the work of the one prosperous surgeon whose department is so irritatingly misunderstood by Mr. Flexner. I do not believe the history of medicine presents a parallel to the munificence of our colleague, Kelly, to his clinic."

It was Osler's conviction that the strict full-time system would turn the university hospital into a research institute rather than a teaching hospital. Is this not one of the real problems with medical education today? Is there not a need for a more appropriate balance of research and patient care in the university hospital? There must be recognition of the fundamental value of personalized clinical practice as the foundation of good clinical medical education, and it must be compensated accordingly. Those men who are willing to work laborious days and nights caring for patients, above and beyond their laboratory and research interests, must be compensated more than their colleagues who eschew this aspect of medicine for the higher life of thinking and investigation on a nine-to-five o'clock basis.

I have no objection to compensation plans. I have no objection to pooling resources, provided recognition, and I mean appropriate academic and financial recognition, is given to those who carry the daily load of the emergency ward, the clinic, the wards, the operating room, and who are interested in the care of the sick man as a person as well as a case. The proper care of the sick takes an enormous amount of time and effort on the part of the faculty. The educational value of this effort is immeasurable. Our current failure to appreciate this is one of the most serious troubles with medical education.

Soon all patients will be private patients and unless a significant number of the strict full-time faculty are willing to see and care for private patients on a personalized basis, irrespective of the method of compensation, the University Hospital cannot compete in the new market place. This responsibility can be shared but not completely turned over to the voluntary clinical staff. Otherwise the University Hospital will encounter the same educational difficulties as the community hospital, namely twenty-seven consultants taking care of a thirty-bed ward! The time has come for the University Hospital to model itself along the lines of the large private clinics. It can also foster research in its departments, as is so admirably done at the University of California, San Francisco, in the Cardiovascular Research Institute under the direction of Julius Comroe.

The third problem with medical education is the progressively rising administrative load which must be borne by departmental chairmen. Young men don't want to head departments of biochemistry or physiology because the load of teaching and administration interferes with their research. If they accept a chair early in their career, as has been the tradition of the past, they fear lest they either will do a poor job of administration and teaching or never advance as a scientist. In the clinical fields the problem is even worse. It is difficult if not impossible for the chairman of a large de-

partment of surgery to operate frequently. If he is appointed when he is young, without a long clinical experience behind him, he may never mature as a clinical surgeon. He may never learn how to care for a patient as a person whom he knows and understands as a man as well as a patient. But this is the essence of the very troubles of which Dr. Cope is speaking. Merely introducing the behavioral sciences into the medical curriculum will not solve this problem. The patient wants his doctor to know him as a person. I have no doubt that a better understanding of what the behavioral sciences have to offer, learned as an undergraduate, may enable the future surgeon to do a better job of knowing his patient, but he can only know his patient as a practicing clinical surgeon.

The time has come to keep men out of the chairmanship of departments until they have an established reputation as mature scientists and clinicians. I would even venture the opinion that a period of active clinical practice would be desirable for the heads of all clinical departments. Well paid administrative assistants, with a background in business administration, are needed for the assistance of department chairmen.

The fourth factor contributing to educational unrest in medicine is something not foreseen by Mr. Flexner, namely national and international commitments, aided and abetted by jet travel. Washington committees, research conferences, visiting professorships, educational seminars, some lasting as long as two weeks, take faculty away from laboratories, wards, operating rooms, clinics, students, offices and home. I shouldn't be here today! I became so conscience-smitten writing these lines that I have cancelled plans for Class Day and my thirty-fifth reunion picnic tomorrow. I am going home to the Senior Class activities with my own students, too late to teach them anything but at least to let them know I wish I had not been away so much.

The time has come for the universities to establish some kind of travel policy for the protection of the faculty. After all this has been done by the private clinics and by industry. There should be a specified number of days that can be used for travel, much as there is for vacation. Exceptions must be made of course, especially for senior professors like myself!

In closing let me say, change the curriculum by making it more flexible. Permit the qualified student to skip any course in which he has had experience and can demonstrate competence. Find time for new material by shortening the time given to old. Better teaching will more than compensate for lost time. Recognize and promote the Abraham Flexners and George Eriksons. Above all, do not lock men who can teach into a curriculum that keeps them from doing so. Finally, protect brilliant and promising men from the burdens of administration until they have clearly established themselves as scientists and clinicians.

Identification between student and professor at the laboratory bench is the true joy of science. Identification of the student with the professor at the bedside, in the clinic, and in the operating room, is the true joy of medicine. Any curricular change which accomplishes this will be eminently successful. To the extent that it does not, it will prove disappointing.

As Jacques Barzun pointed out many years ago, the virtues which we hope to instill in the minds of our students, "come not from a course, but from a teacher; not from a curriculum, but from a human soul."

The Problem of Delivering Patient Care

by Leland S. McKittrick '18

ANY INTERPRETATION of this new curriculum in terms of its effect upon the clinical practice of medicine must be done in general terms since only time, experience with, and modification of it will determine its ultimate effectiveness in carrying out the basic responsibilities of a medical school education. We discuss and we change curricula, but to what end? Just what kind of a product should we try to produce?

We know that the future role of the graduate in medicine will depend on the preparation he has received in his four years of medical school, the character and quality of his specialty training, and the intensity and thoroughness with which he applied himself throughout his formal educational years and then to his chosen career. Whether this be in academic medicine, patient care or both, he should be so prepared in and inspired by the medical sciences and the areas of human and social behaviors that, as a physician, he can and will accept the challenges of the rapidly moving and changing world he is about to enter. To do this, his scientific training must permit him to understand and utilize the knowledge now available to us, and to evaluate and finally apply new advances as they come along. He must be knowledgeable in research methods to permit him to participate in or to interpret and evaluate accurately new clinical or scientific contributions that may relate to the care of his patients. He must have the ability to think and to reason logically, to select from all of the information available that which is pertinent to each patient or to each project; put this together in a sound, logical manner and come up with a reasonable, if not always accurate conclusion. He should have an understanding of people and the effect of illness upon them and their families. He should know something of the effect of the patient's emotional response upon the disease process and its course, and above all, he must have a deeply rooted sense of his responsibility to the patient as a human being, to the patient's family and even to the community in which he lives.

It is my impression that in the selection of students to enter our medical schools careful thought is given to their qualifications. We look for intelligent, highly motivated young people. We want those with a breadth of interest whose educational backgrounds have reached into the humanities and whose activities in college have extended beyond their academic requirements. Above all, we try to select those whose interest in the sciences is not just for science itself, but science as a means of increasing our knowledge of disease and as the mechanism through which disease is prevented or cured. During the years I was interviewing students as a member of the Admission Committee, I was impressed by certain characteristics most of them had in common. They were scientifically oriented; had an interest in people; and had a desire to use their intellectual and scientific accomplishments to help others. Although aware of the economic opportunities, I never had the feeling that this aspect of medicine was a major factor in its attraction to those students we accepted, nor that the prestige of the physician played a significant role in their selection of medicine as a career. I have always felt, and I still feel, that most medical students and especially those at a school like ours with its commanding opportunity for selection, rank significantly above the average graduate students in other fields both intellectually and in their motivation.

With admissions committees giving so much consideration to the qualifications of these people we select for a medical education, we, of the faculty, have the obligation to develop all of these qualities which influenced the committee in its selections. I have long been convinced that we have not, nor do we now do this. I am not alone in this conviction.

Not too many years ago, after a long, arduous meeting of the Council on Medical Education, between a relaxing dinner and bedtime, several of us were discussing medical education in general. The dean of a medical school (now Chancellor of the University) set the topic for the evening by saying that something happened to his medical students between the



Dr. McKittrick shakes hands with Elmer S. Waring '18 as Rustin McIntosh '18 looks on.

The patient is more like an exhibit than something human

time he gets them and the time they enter practice. We all agreed. Why should this be? We are very careful in the final selection of our students to put much emphasis on their motivation as well as their non-scientific interests, yet what have we done to stimulate and develop these after we admit them? They come to medical school and immediately begin two strenuous years of lectures and laboratory work in the related sciences, with little time for anything but the memorization and accumulation of knowledge in these areas. The occasional exposure to patients is rather remote and impersonal. The patient is more like an exhibit than something human. It is true that in recent years there have been increasing efforts to correlate the basic sciences with patient care, but little or nothing has been done to further the students' interest or to give them experience in the social and behavioral sciences. Many, if not most, of our students need scholarships, loans or both, and are in debt at the time of graduation. They then enter a period of graduate education and another three or five years of deficit financing. It is difficult for me to see how the average young man could stand this type of exposure over so long a period of time and go out into the practice of medicine without being economically oriented and having had his original humanitarianism dealt a heavy, if not lethal, blow.

There is another factor, whether we choose to acknowledge it or not, that is having its effect on medical education. I refer now to the role of the Federal government in giving financial support to our medical schools. Since World War II the amounts allocated to our schools in the form of research or special grants have increased to the point where most of the money now spent by them comes from Washington. Our own school, for example, if I accurately interpret Dean Ebert's recent annual report, received approximately \$17,000,000 in government grants and \$7,700,000 from all other sources during 1966-67. Thus last year roughly 70 per cent of the money received by Harvard was from the Federal government and earmarked for specific projects. It is this increasing dependence on Federal research grants that has resulted in the frequently heard criticism that medical schools now are placing too much emphasis on research and too little on patient care.

Probably few of our medical schools at the present time could be separated from this money without severely jeopardizing their present programs, and I suspect that a number of the schools would be unable to continue without this support. I do not suggest that Federal support is bad; it is in fact essential. However, this money does not come to the school as an institution, but to the individuals or groups carrying out the research projects on a basis of the program which is planned and presented. It is, therefore, not under the complete control of the dean and faculty as a whole. Unavoidably this means, I am certain, that in the selection, and particularly in the promotion of the younger faculty members, high priority may be given to those whose research abilities and whose abilities to organize good research programs will be instrumental in bringing into the medical school large sums of money. However, time is now in our favor. Two changes

are either in the offing or already in effect. The American Medical Association for years favored Federal funds for construction but not for the support of medical education, and closed its eyes to the rapidly mounting research grants. It now has reversed itself and is leaving nothing undone to bring Federal money to our medical schools for institutional uses as well as for research purposes. Then, too, compensation of our interns and residents is now or soon will be such that at the completion of medical school the young physician will be self-supporting. Thus the way will soon be cleared for an environment more suitable to the proper development of the future physician than now exists. It remains for our medical schools to add new effort to make the most of these opportunities.

Medical education has not remained static. In recent years there has been increasing emphasis on curriculum experimentation with limitations of lectures and formal classes, more time and opportunity for elective work, earlier exposure to patients and greater coordination between the basic and clinical sciences. The new Harvard curriculum is one of the latest and probably most radical of these new programs and offers challenging possibilities. A new curriculum on paper, however, no matter how good it is, will not succeed unless it is properly implemented by the faculty and accepted by the students. Its acceptance by the students will depend upon the enthusiasm and excellence with which it is carried out by the faculty. The ability to teach and to impart to young people knowledge already in existence and to inspire them to seek for more is not given to all. There are many of us in the practice of medicine who like to teach but are unable to do it well. There are certainly many in our medical schools and on our hospital staffs who like to teach, are willing to teach but whose basic interest is research, whose life is pretty much dependent upon their ability to produce, and this ability, even though the will is there, does not mean that the individual is an inspiring and good teacher; or that he can and will take the time and give the thought necessary to develop and maintain a good teaching program. Learning is a two-way street. Without an inspiring teacher, deeply interested in helping others to learn, and devoting a large amount of time and effort to it, the student, no matter how carefully selected, will not be a stimulating and responsive one. There must be a meeting of the ways. We must have good teachers who can inspire and will be inspired by enthusiastic and receptive young people.

Think, reason, rather than memorize

I have long tried to emphasize the importance of learning to think and to reason, rather than to memorize and try to remember. Experience is not the end result of memorization. It comes from observing, interpreting, thinking and reading, then selecting and storing the small but important segments of each experience. Two years of intensive lectures, laboratories, examinations and a few patients has left little room for other than memorizing, and essentially no room for the development of other qualities possessed by the students. The

new curriculum departs radically from our former concept of the medical school education. There is, to be sure, and must be, a certain core of scientific knowledge to be learned in a more exciting way; however, the properly motivated young man and woman, after four years of college education, should no longer require the highly regimented courses of the past. The medical school, like other graduate schools, now accepts this, and is planning its program in such a way as to develop the student as an individual, yet part of the community. This means that he will have time to think, and to plan, and will have some control over the way his time is spent. We of the faculty must have confidence that after carefully selecting our freshman class and giving them the opportunity and proper guidance, they, in turn, will respond and fulfill our requirements, yet will develop their own individual potentials.

It may have taken a lot of time and a lot of thinking and planning to put down on paper how these things are to be accomplished, but the real challenge still lies ahead. Implementation will be difficult. In the Swampscott Study on Behavioral Sciences in Medicine, a committee of unusual experience, interest and talent spent two weeks discussing the applications of the behavioral sciences to medicine. Dr. Cope, in some 90 interesting and well written pages gives us a report on this meeting, yet I remain quite unclear in my own mind as to just how these will be brought to the student in a meaningful way. However this is developed, the laboratory must be the patient, his family and his environment. To be successful, the medical student must be brought into this relationship early in his career and have a well planned and carefully organized program extending throughout the four years in which he has an active and increasingly responsible role in patient and, especially, family care. He must develop a feeling of his great responsibility to the patient as an individual and to the patient's family. He must learn early that often there comes a time to concentrate on the treatment of the family rather than the patient. It is in medical school, not in his specialty training, that the student should begin the development of those qualities that are so necessary to the effective total care of the patient. I suspect that my generation had a touch of the behavioral sciences as a by-product of our third year obstetrics. It occurred on Harrison Avenue and in the homes of the South End. It lasted only three weeks, but what a productive three weeks! Fresh from the lectures, laboratories and classes, the members of the third year class, in small groups, bought or borrowed a small black bag; put into it a sterilizer, rubber gloves and a few instruments; took a few of our own belongings and moved into "The District" with its headquarters on Harrison Avenue. For three weeks we lived obstetrics and people, responding where needed to the women who were (or thought they were) beginning labor; going to and delivering them in their homes; following them and their babies until each was ready for discharge. We had

an inspiring teacher to advise or to help us, who spent a part of each morning discussing obstetrics and any problems relating to our patients. This, to me then and to me now, was teaching at its best. The feeling of responsibility to the patient and to her family, an understanding of the effect of this experience upon the husband and children, an understanding of the limitations within which the entire family lived, did to me something quite different from the patient in the hospital bed, completely apart from the world in which he lives.

Somehow it is difficult to see how the social and behavioral sciences of the laboratory can be satisfactorily indoctrinated in the young student with our present educational set-up. This must now be done in our teaching hospitals where much of the teaching of the medical student, intern and resident is by the resident at the next higher echelon. The interest, almost of necessity, is in the disease of the sick patient, frequently apart from the patient as a sensitive human being, and totally apart from the family. Whether the new programs of community health services will afford the desired opportunity or whether, with imagination and careful planning, such an exposure can be developed within the hospital, I would not know. I feel strongly that part of the development of the medical student into a physician, whether he be a practicing physician or a full-time teacher in a medical school, is an understanding of the importance of the patient's family and home surroundings to his treatment. This new curriculum, I believe, offers the time to develop this type of experience. Whether it offers the opportunity or not, again will depend upon the imagination and enthusiasm generated by the faculty toward the implementation of the program, to its acceptance by the students, to a continuing interchange of ideas between the donors and the recipients, and to the willingness to make changes in keeping with the shortcomings of the present, and the opportunities of the future. I suspect that this new program is what the late Dr. Sam Harvey of Yale had in mind some years ago when he said: "Tuition is not carfare, but an entrance fee."

These are very exciting years in medical education. I believe that education is on the move. The various experimental curricular changes that are taking place in many of our medical schools, and particularly the type of change that is now a part of our own school, are more in keeping with the demands of medical education, and will come closer to fulfilling the needs of an educational program preparing young people to bring better and more comprehensive medical care to the public. As I see this new curriculum, it will not be easy to implement and carry out its full intent. I do believe that with an enthusiastic faculty, a tolerant and understanding student body, a few changes here and there, and with continued imagination and determination, this new curriculum can only influence medical care for the better.

* * *





The Student Body Then and Now

by Robert J. Glaser '43B

FOR MOST OF US returning twenty-five years after we received the M.D. degree, it seems very much as if we had been away for quite a short time indeed. True, there are a number of new and impressive buildings, such as the Countway Library where before there stood less magnificent structures. Despite the illusion that it has been but a short moment since we passed through these portals, we cannot escape the reality that a quarter of a century has indeed gone by since we left these halls, clutching diplomas that certified us as physicians. The pleasures of a reunion with good friends cannot obscure the inevitable loss of hair and gain of girth that bear testimony to the fact that 1943 was a long time ago. We also are saddened that our number has been lessened and that nine of our classmates are no longer with us.

For those of us who have maintained some connection with medical education through our professional careers—and in the Class of 1943B our reunion report indicates that some eighty-five of us have—there has been an ongoing opportunity to see successive generations of medical students. Are they different now from what they were and, if so, how?

There are to be sure certain superficial differences that immediately come to mind. Twenty-five years ago, the coat and tie, the razor and the barber shop were all more in vogue than they seem to be today. If students in our day were not happy about the medical school educational program, that fact was not apparent. In general, there was more evidence of the "light touch" than one sees today. But these are, as noted, mostly superficial. Of far greater impact is the inescapable evidence that there have been great changes in the overall fabric of medicine and society over the past

twenty-five years, and these changes have inevitably significantly affected the medical student. What have these changes involved and what do they augur for medicine?

First of all, it is almost unnecessary to remind those in medicine of what has happened in the biomedical field in the period since World War II. The spectacular development of biomedical research since 1947 has altered medicine dramatically. Remember if you will that in 1947 the total expenditure for biomedical research in the United States was of the order of \$87 million. This year it approaches \$1.5 billion. This support has resulted in a scientific revolution in biology. Those of us who were in medical school before or during World War II need only recall how many of the forms of treatment that today are commonplace were unheard of or at best were only on the far horizon in our time. When in our era Robert Gross accomplished the first successful ligation of a patent ductus arteriosus, it was a dramatic contribution. And it is in no wise diminished in terms of its importance when one calls attention to the fact that today repair of patent ductus arteriosus attracts little or no attention, and even many forms of open heart surgery go forward in routine fashion. Although the sulfonamides had been introduced when we were in medical school, penicillin was a drug that most of us had barely heard of, and the antibiotic era had not yet really begun. When our distinguished classmate, Peter Forsham, made the diagnosis of phenylketonuria as a third-year student in the MGH Outpatient Department, it was acclaimed a coup, albeit one without practical application. Today, early diagnosis and prompt treatment of this inborn error, simply accomplished, prevents the tragedy of mental incompetence.

DIVISION OF STUDIES
TOTAL NUMBER OF HOURS FOR EACH SUBJECT

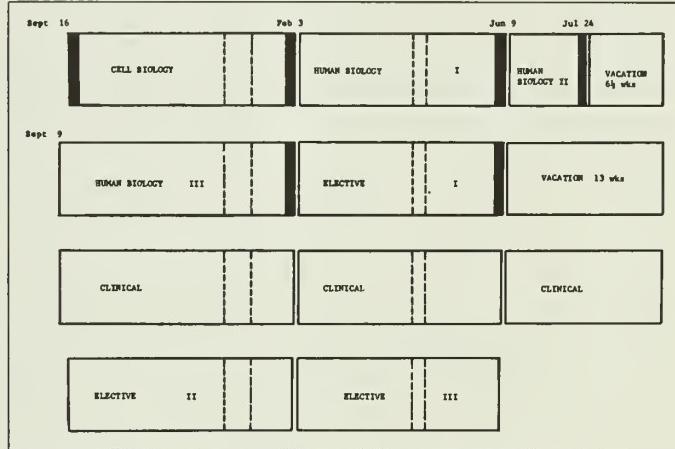
FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR
Anatomy	280	Bacteriology	144
Histology	280	Pathology	335
Physiology	232	Pharmacology	142
Biochemistry	232	Medicine	236
Medical Psychology	10	Surgery	75
Thesis	50	Obstetrics	15
		Medicine	213
		Dermatology	37
		Neurology	31
		Psychiatry	48
		Urology	31
		Surgical Pathology	175
		Gynaecology	33
		G. U. Surgery	33
		Laryngology	33
		Otology	33
		Orthopaedic Surgery	38
		Obstetrics	128
		Legal Medicine	6
		Pediatrics	68
		Preventive Medicine	124

* The time allocation for these two subjects may be arranged at the student's option.

* The time allotment for these two subjects may be reversed at the student's option.

HMS Curriculum in 1940

HMS Curriculum in 1968



I still have my notes from the course in Biochemistry that we took in 1940-41; and it is of some significance in reviewing them that nowhere did I find DNA or RNA mentioned. Had we fallen into a Rip Van Winkle-like sleep on December 20, 1943, when we left these environs, and returned this year to begin the medical curriculum again, we would undoubtedly be hopelessly lost from the first day. Many high school seniors enter college with a far more profound understanding of modern biological phenomena than most of us had when we began medical school in 1940 or even finished it in 1943! If you doubt the foregoing statement, let me suggest that you look at the kind of textbook being used in high school biology these days. Brief perusal of such a volume will substantiate my point emphatically.

But not only are today's medical students far better prepared from the scientific point of view for the study of medicine than were the students of our time, they are also, as a group, distinctly more concerned with society and its problems. They have after all grown up in an age when nuclear weapons have represented an ever-present threat to the persistence of civilization, at least as we know it. Although almost none of today's medical students know World War II except from the history books, they have known the cold war and the strains it has produced and they remember well the Korean conflict. More recently the civil rights struggle has attracted their interest and often their participation. And finally, the existence of a war—or of a pseudo war—in the Far East, unpopular with many segments of our population, and particularly unpopular with those of college and graduate school age, has inevitably had an impact of major sort, an impact marked at least by unrest and more

often by vigorous protest.

Thus, not only is today's student very unhappy with the world as he sees it, but he is as well quite critical of those of us whose generation inevitably is blamed for present-day woes. Furthermore, today's students are articulate, and they voice their criticisms vigorously—and often endlessly.

They focus much attention on the educational programs and those responsible for them. There have always been unpopular courses and unpopular programs in medical schools and in other parts of our universities, but at no time, at least in my professional career, have I found students to be so critical of and displeased by their educational experience.

To a significant degree, all of us in medical faculties have profited from the critical judgment that recent classes of students have made of our efforts. They have caused us to face up more realistically than ever before to the deficits in our educational offerings. They more than we have realized that the old lock step educational programs of yesterday are inadequate in these times, and their prodding has brought faculties face-to-face with the need for change.

The other papers in this issue deal admirably and lucidly with the subject of curriculum. In this connection, it is of interest to contrast the curriculum that the Class of 1943B confronted (a word very popular with students today) and the one upon which the Class of 1972 will embark next September. Note that the medical school catalogue we were given as we entered HMS showed that 1943B had 144 elective hours—of a total of 4190 hours, all of 3.4 per cent (Figure 1). As nearly as I can calculate, the new HMS curriculum offers students something of the order of 30 per cent elective time—an almost ten-fold increase. (Figure 2)

Today's students have a genuine interest in humanity . . . they are also at times naive and unrealistic

We have just introduced a similarly flexible curricular change at Stanford, and other schools have or are doing likewise. In each instance, curricular change has represented not just a passing fad, but an overdue response to the enormous growth in the body of knowledge, and the increasing competence and sophistication of students.

Twenty-five years ago, the number of students interested in research was relatively small. That this was so is not surprising inasmuch as the number of faculty doing research was likewise small. As research programs in medical schools began to grow, more and more student participation in research took place. To a degree, research activity on the part of a student has become a status symbol, and in some instances, students have engaged in research activity as an effective way of helping to finance their education. Most of us believe that the opportunity to take part in an investigative project does, in fact, enhance the quality of a student's medical education, even though he may not ultimately seek a career in the laboratory. And one cannot help but admire the quality of research being carried on by students in many of our medical schools. Each year when I hear students present reports on their research, I am impressed with the sophistication and finesse with which they have carried out and are able to report their work.

But the increase in research activity in our medical schools, albeit its benefits to medical science and ultimately to medical practice, has inevitably skewed the balance between teaching and investigation, and in the last several years, there has been mounting criticism, particularly on the part of many medical students, of the research emphasis in medical school. It is only fair to point out that the problem that most medical schools face is not that they are too much involved in research; rather, the problem is that federal funding, on which we all depend so heavily, has been restricted almost entirely, at least until very recently, to research support and there has been little or none for teaching. The terms under which research support has been given generally have restricted the teaching activity of faculty members, many of whom are indeed interested in, and capable of, teaching effectively. But irrespective of the reasons for the imbalance between teaching and research, it bears repetition that many students are critical of the research emphasis in medical schools. Their concerns reflect the fact that they have, as a group, become more and more concerned with the problems of medical care, nationally and internationally. They are particularly concerned about the problems of the health care of the poor.

In my experience, the more able the student body, the more they express this concern for the health care of the poor. We have seen in the last several years the development of an entity called the Student Health Organization. Student groups in a number of medical schools on both coasts and in the Middle West, particularly at the University of Chicago, have directed their efforts more and more to becoming actively involved with health care programs in poverty areas. Many of the members of the Student Health Organization

are critical of their own schools because they believe that these schools have not accepted adequate responsibility for community health programs. This is a complex issue, and this is not the time nor place to debate it. I have my own views as to what the role of the medical school is vis-a-vis the community, and although I believe that the day has long since passed, as I have said elsewhere, when a medical school could remain an isolated enclave in society, I continue to believe that it would be inappropriate for medical schools to become over-involved with patient care programs on a broad scale. But be my views as they are, it is nonetheless quite characteristic of today's students to be concerned in an aggressive way with this problem. All of us are aware that the need to provide quality medical care for the large masses who inhabit our urban ghettos and many parts of rural America, particularly in the South, is a challenge that will demand the best we can bring to it.

Over the past months, I have spent more time with medical students than I have since I first fell from the grace of pure academia to deaning in 1953, and was given responsibility for student affairs at the Washington University School of Medicine. And the more I talk with today's students, the more I am impressed with their deep and genuine interest in humanity, and with their sincere desire to influence the direction of medical care toward the development of better systems that will benefit more people. Yet despite their keen intelligence and their perceptiveness in many areas, they are also at times naive and unrealistic. It seems to me that the exuberance of youth, coupled with a certain disdain of their elders, some of which is undoubtedly deserved, does tend to lead today's students to unproductive expenditures of energy.

The next few years are certain to be challenging and difficult for the medical schools of this country. Faced as all of them are with increasing financial distress, with increasing pressure from society for the more rapid transfer of the fruits of medical science to medical care, and with an extremely able, demanding and critical student body, all of us who form the faculties of America's medical schools will be hard pressed to keep our enterprises moving forward effectively and well. As that patron saint of Deans, Nicolo Machiavelli, once said, "There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain of its success than to take the lead in the introduction of a new order of things." Our students are indeed leading the demand for a new order of things, and our task in responding is to accomplish progress amid order while maintaining order amid progress.

In closing, I should like to express the hope that when the members of the Class of 1968 convene at a similar event as this twenty-five years hence, they will be able to look back, as I believe we are able to do now, with some humility and some amusement and yet with some pleasure—pleasure derived from the knowledge that, in the intervening quarter of a century, they have had an opportunity to participate in the progress of medicine for the benefit of mankind.



BASIC SCIENCE in the MEDICAL CURRICULUM

by Ralph M. Steinman '68

FROM THE POINT of view of a student who has spent a considerable amount of elective time in basic research, I should like to discuss the teaching of basic science in the new curriculum. In this country basic science began to play its integral role in medical education before the turn of the century at the Johns Hopkins Medical School. But it was in 1910 that basic science received its greatest impetus when the Flexner Report appeared, stressing the idea that "the physician's concern with normal process is not disinterested curiosity; it is the starting-point of his effort to comprehend and to master the abnormal." This morning, we heard that the traditional organization of the curriculum since the Flexner Report will be substantially changed. Less time will be spent in the required biology and clinical courses, and more time will be allotted for the teaching of social science and for elective study. The philosophy behind these curriculum changes acknowledges the enlarging scope and needs of the medical profession, but it does not detract from the contention that the effectiveness of medical practice and progress are closely tied to basic science. I will consider the teaching of basic science in each of the three main components of the new curriculum, namely the preclinical core, the elective period and the clinical core.

The manner in which preclinical science should be taught has been the subject of considerable debate among both faculty and students throughout my career at Harvard Medical School. Changes have been made from year to year, but the new curriculum will result in a major alteration of previous techniques. The formal instruction in biology will be shortened, and the presentation of the different basic sciences like histology or microbiology must retain some sort of identity during this process of curriculum integration.

This means that the student should become familiar with the methods and points of view that each discipline employs. Also if more than one of the preclinical areas contribute information to a single problem a representative of each should present his own case. For example, when fluid and solute movements across capillaries are being discussed, both the physiologist and the morphologist should relate their respective findings and ideas.

Maintain the identity of the basic sciences

Maintaining the identity of the basic sciences is important to the student, for otherwise he will emerge with a rather superficial summary of the way a cell or an organ is thought to function, without a real exposure to the methods whereby that knowledge was obtained. As a physician, however, he will be faced with the lifelong task of constantly revising and adding to the ideas he learned during medical school. Unless the pre-clinical teaching gives the student some conception of how these ideas were derived, he will see less meaning to new developments in science, and probably will find it less enjoyable and more difficult to incorporate biological advances into his thinking.

By gaining an appreciation of the approaches of the different basic sciences, the student will also have a chance to identify one area of biology in which he will try to gain expertise. I will try to clarify the value of a commitment to a single area of basic science by considering another part of the curriculum, the elective period.

One of the major changes in the new curriculum is the provision of a large bloc of time, about a year, for elective

Where, when and how to integrate

study. I have spent an equivalent amount of time doing basic research in our Department of Anatomy. In order to do this in the old curriculum, I had to take a year's leave of absence between the second and third years. My interest was in the differentiation of cilia in an amphibian embryo. Using the electron microscope, I proposed a sequence of events that seem to occur during the production of cilia. I then obtained some confirmatory evidence for this developmental scheme by blocking certain steps with colchicine.

The decision to spend a long elective period in research is not simply a matter of whether or not the student intends to pursue a career in basic science. In my own case, I will begin an internship in medicine. Most students, including those who take a year's leave of absence to do research, do not know precisely what their future interests will involve. In fact, if the biographies of many of this school's basic scientists are examined, it will be clear that the road to research following receipt of the M. D. degree can be quite circuitous. For the most part, the desire to spend elective time in basic science starts out with the student enjoying one area of biology more than others. He then spends free afternoons or vacation periods with some scientist in his area of interest. If the student still is attracted to the field after this introductory exposure, he then is in a reasonable position to commit himself to further elective work, and usually by this time he is curious about some specific biological problem. A medical school's program in student research therefore depends upon the ability of the student to distinguish an experimental approach to biology that he prefers above others, and this attachment generally begins during the instruction of the preclinical core.

Why should a medical school encourage the student to do basic research in his elective period? Two reasons are traditionally given. The first is that a student research program encourages some to consider careers in investigation, and starts them off early in their training. The second reason is that research gives the student the kind of first hand experience in science that would certainly seem appropriate in a profession that is rooted in biology. If there is one point on which most experts on the psychology of learning agree, it is that learning is more likely to be effective if the student is personally involved in the things he is trying to master. In this instance, a student learns to understand the spirit and realities of science by taking an active part in it, by assuming some of its responsibilities, and by being able to work under the close guidance of an experienced scientist.

I think there is a third reason why an elective period in basic research is of value. To my mind at least, it has encouraged and helped me to keep up with a wide range of

topics in scientific medicine. By doing some research, in my case in morphology, the student gains a good deal of expertise in one area of biology which then makes him more confident and more enthusiastic about keeping up with other areas of science and with their applications to the study of disease. After an intensive experience in electron microscopy, I of course, find myself identified with a morphological point of view, and I actively seek out those papers and seminars in which morphological evidence is presented. However, my commitment to this one area of basic science is really a framework around which I try to incorporate ideas acquired by other biological and clinical approaches. I feel that instead of being limited by the very specialized nature of my research, I have been inspired and trained to keep in touch with a wide variety of medical developments. We are all aware that it is impossible for a physician to maintain his training in biology at the same level of thoroughness that he had in medical school. But I suggest that if he can gain knowledge in depth about a single area, he will be able to bring together a good deal of biology and medicine in a more facile, enjoyable and effective fashion.

Up to this point, I have considered the teaching of basic science as it pertains to the preclinical core and to the elective period. I have tried to emphasize the view that basic research is of value to the student whether he ultimately pursues a career involving research or clinical practice. What about the more obvious matter of integrating the basic science instruction with the clinical teaching? Some of my classmates and faculty feel that students should be exposed earlier to sick patients, for this change would provide an effective means for learning the biological principles which these patients illustrate. Others do not agree with this line of thinking. They do not see the necessity for example, of seeing a patient being treated for diabetic ketoacidosis in order to learn about acid-base problems. They maintain that the student, so early in his training, knows too little about either acid-base metabolism or diabetes to really benefit from this early clinical contact. My experience generally has been that biology was not made any clearer when I was exposed to patients in the first two years.

On the other hand, there seems to be a greater consensus that, where possible, the preclinical teaching should refer to coming clinical applications, without actual patient exposure. I hope this sort of teaching will be utilized more frequently than presently is the case. It is both stimulating and instructive for students to see how diseases illustrate the most fundamental of biological principles, and this need not involve the considerable time and effort that are required to arrange early student contact with patients.

the basic sciences with patient material

I think the place to concentrate on the integration of the basic sciences with patient material is in clinical teaching itself. I find it surprising that instruction in biology is largely confined to the first two or preclinical years, even though the main purpose for teaching basic science is to enable students to understand the biological basis of disease. The bulk of the clinical courses at present emphasize the practical and empirical side of patient management and pay much less attention to the conceptual framework previously presented. Certainly the clinical area is the appropriate time to introduce students to the practical aspects of patient care. Yet the student must realize that he will acquire abundant practical experience as a house officer, and he should not sacrifice the opportunity of learning to apply his preclinical education where possible. Flexner cautioned that "medical school cannot expect to produce fully trained doctors; it can at most hope to equip students with a limited amount of knowledge, to train them in the method and spirit of scientific medicine, and to launch them with a momentum that will make them active learners—observers, readers, thinkers, and experimenters—for years to come."

What are some of the benefits to be obtained from a greater emphasis on basic science in the clinical courses. Most students could probably learn a lot of pathophysiology if placed in a clinical context. Both biology and medicine are just more fun when they are integrated with each other, and students are more motivated in a clinical setting. Let's consider the current interest in the area of autoimmune disease. In second year, the concept of autoimmunity was mentioned just about any time that the etiology of a lesion was unknown, although the bulk of the instruction was directed to the immunologic mechanisms that might be responsible for this type of process. During my clinical rotations, I was involved in the care of patients with diseases like glomerulonephritis, pernicious anemia, and thromboeytopenic purpura yet the very relevant concept of autoimmunity was not sufficiently stressed. It seems to me that the clinic is the best time to gain a real appreciation of how the clinical features, the pathological data, and the pertinent basic research together support or detract from the role of autoimmunity in each of these patients. We should make more use of the talent that is available, namely senior residents, clinical fellows or faculty members engaged in that area of research to review and apply the knowledge that we gained in the first two years, and to relate new developments in the particular area of concern. This type of teaching can occur in regularly scheduled discussion groups or preferably in more spontaneous sessions close to the time that the patient is being worked up. In this way, the student would have a

chance to learn some of his preclinical material in a more meaningful context, he would see that physicians are indeed concerned with many aspects of biology that he previously may have considered too sophisticated or too basic, and he would also be impressed with the rapid turnover in the basic sciences.

The clinical courses could be helpful in a way other than assisting the student in learning basic science, both new and old. This benefit concerns the orientation the student would gain toward patient management if he were encouraged to consider the mechanisms that were operating in clinical situations. The impressive clinicians, in my experience, were the ones who always asked why something was happening, or what is the evidence that what I was thinking or doing was correct. Take, for example, the alcoholic who enters with upper gastrointestinal bleeding. It is critical for the student to learn what lesions may be responsible for the bleeding, how to find out which is in fact present, and then what to do about the diagnosis. But time should also be taken to review what is known, or is not known, about the role that alcohol or liver disease plays in the pathogenesis of these lesions, or what alcohol or liver disease does to the patient's ability to coagulate blood. The student who learns to be curious about the empirical observations in the situation in question will acquire an approach as well as some specific ideas that will be of relevance to the handling of other patients. If more of the preclinical material were reviewed in a clinical context, then, it is more likely that the student would have a better chance of learning those biological concepts that keep recurring in medicine; he would find more reason to maintain his background in basic science; and he would gain an orientation to patient care that would reflect the assertion that "investigation and practice are one in spirit, method, and object."

In summary, the new curriculum represents a significant change in medical education. It acknowledges that there is a wide range in the ultimate interests of physicians. In spite of the increasing diversity within our profession, a good deal of the practice and progress of medicine still depends on a sound understanding of biological principles and facts. Traditionally, medical schools have concentrated their efforts in basic science on the formal courses of the first two years. I feel that the curriculum must pay additional attention to the integration of the preclinical and clinical material and should continue to provide opportunities for students to become involved with basic research. I have tried to show that these adjustments may enable students to see more meaning in their biological training, and should help them integrate their present and future knowledge of basic science into the understanding of sick patients.

Community Health Activities

OVER THE PAST several years American medicine and this medical school have come to recognize an increasing scale of social responsibility. We have seen the acceptance of "community health" as a legitimate concern and even as a specialty interest for modern physicians. In pursuit of this interest, a number of sophisticated doctors have acquired proficiency in such skills as budgetary economics, sociological analysis, demography, cybernetics, administrative law, communications and motivational propaganda. The new curriculum will undoubtedly enable certain students to develop these techniques while still in medical school, just as other students will delve deeply into isotope medicine, hemodialysis, or electron microscopy.

So it should be. After all, our future practice and research will follow many different paths and so should our education. Medicine has effectively adapted the techniques of physics and chemistry, and it is now adapting those of social science. Our preventive medicine and elective course options even now suggest this direction. I have no doubt it will develop rapidly. Physicians and their educational institutions are very resourceful when it comes to appropriating the technical developments of other disciplines.

However, all this reflects the trade-school aspect of medical education—a function we should readily acknowledge, but not the aspect on which I would like to focus today. There is another side to community health activities which has not found a place in the medical school curriculum, nor is it represented in the School of Public Health. I am thinking of the educational experience that transmits not necessarily a technique but a set of values. I should like to consider that part of the doctor's training that results not so much in a skill, but in a firmer and fairer commitment to those large groups in society that we have ignored or patronized for so long. This is the aspect of medical education for community health that demands our attention today in these times of increasing professional narrowing, isolation and alienation.

In Mississippi

As I attempt to plan my future as a physician and citizen, I frequently think of several personal experiences in community health activities over the past four years.

I think back, for example, to 1964, the summer immediately before I entered medical school, when I spent a week in North Central Mississippi as assistant to a health team sent

by the Medical Committee for Human Rights.* The South was not new territory for me. I had traveled in that part of the country many times before. Five years earlier I attended a National Science Foundation high school summer session at Mississippi Southern College in Hattiesburg, and five years before that I lived for a year in a small city in Florida where I was enrolled in the local central school. However, this one-week visit to Mississippi during "Freedom Summer '64" offered a different sort of education. Our team's assignment was to provide medical presence and services for civil rights workers in five counties. We arrived one week after the discovery of the mutilated bodies of Cheney, Goodman, and Schwerner.

Characteristically, the young civil rights workers insisted they themselves needed no medical attention, but urged us to devote our efforts instead to the health problems of the local citizens whom the movement had come to serve. We took their cue, somewhat embarrassed not to have thought of it first and hardly knowing where to begin. The one practicing black physician in the region, presumably out of fear, chose not to speak with us. White physicians also generally refused, and even the one notable exception advised us to mind our own business and insisted that we not tell any of his colleagues that we had spoken with him. The young, black dentist in the area spoke to us with great suspicion, unable or unwilling to talk about the nature of his patient load,

* The Medical Committee for Human Rights is a national organization of health professionals, students and others concerned with health care. (Information and copies of its paper, *Health Rights News*, are available from the new headquarters at 510 Madison Avenue, New York, N. Y. 10022.)

in the Curriculum

by Henry S. Kahn '68

dental hygiene in the community, or his relations with local, white practitioners.

By contrast, the excellently-trained, local health officer was talkative and cordial to an extreme, although his sense of euphoria was slightly alarming. He assured us that all local health problems were under control and adequately reported. The large stocks of contraceptive pills which he distributed at cost would, in any case, rapidly improve the health and welfare of the Negro citizens. He regretted, however, that "outside agitators of extremely radical political persuasions" were destroying local customs, forcing Negroes to abandon their "delightfully oriental traits" of respect and responsibility. "With all this agitation," he lamented, "the Negroes are losing their values and beginning to count on the State for the welfare of their elderly and indigent, just as whites have always done."

We gained essentially no information from the administrators of two, small, county-supported hospitals in the region. One of them volunteered nothing during our brief conversation except a frequently repeated reminder that his institution was built entirely with local funds, that is, without Federal Hill-Burton money (thus, outside the pale of any Federal Civil Rights provisions). The administrator of the more modern of the two hospitals quizzed us intently about our faith in God and knowledge of New Testament scripture. Fortunately, our team leader was a devout and well-read Protestant missionary physician, but even that may not have satisfied him. As we drove out of the hospital parking lot we were followed by an unmarked car which tailed us out into the open country where it then pulled up alongside our automobile and forced us off the highway. Two non-uniformed,



middle-aged men stepped out, claiming to be the County Sheriff and his Deputy, and took notes on all our identification papers. They warned us that many important people in the County wanted us to keep out and would do us physical harm if we stayed in the area. If we were not learning about community health, at least we were beginning to learn some lessons in community sickness.

It quickly became evident that the local professional community was not necessarily best equipped to describe or understand the health issues in the surrounding population. In this Mississippi context, the lay black leaders and the civil rights workers had much more relevant information, and they could quickly fill gaps in their knowledge. They noticed which families were excessively thin and which were overweight; which had clean running water and which had only outhouse privies. They knew in which hospitals and under what circumstances a black patient might be refused admission. They knew which families forbade smoking and which forbade birth control. They had a reasonable idea of who was diseased, whose baby had died, and who was not immunized. The local black leaders and the civil rights workers cared passionately about the community around them, they identified with its broad social and political interests, and they were trusted. Doubtless, these laymen had the most to teach us about community health.

In Massachusetts

But a Mississippi experience should not have to stand alone in illustration of more general points. I should mention an experience in the summer of 1965, after I had completed the first year of medical school and wanted to learn something

about health problems here in the North, in this case, Roxbury, Massachusetts. With the support of Harvard's Laboratory of Community Psychiatry, two other students and I attempted to find out how some of the Roxbury citizens viewed local health facilities and how their perceptions influenced their utilization of these services. The Boston Chapter of the Medical Committee for Human Rights, concerned with northern problems as well as those in Mississippi, had established a reservoir of good will in Roxbury by providing free summer-camp physical examinations for over 400 local children. By being identified with these, we found it relatively easy to ask the parents of these children about their health care. I myself interviewed 26 families in considerable depth, most of whom were Negro, poorly educated, and in what we consider the poverty class. They had a lot to tell us.

I asked the primary respondent in each of the families, for example, "If you had a chance to set up and manage all the health services in Boston—no worry about cost—what kinds of changes or improvements would you make?" Some were initially reluctant to respond, but with a little encouragement each gave thoughtful answers. As one might imagine, many responses included suggestions about the City Hospital such as reducing the waiting time, enlarging the staff, and modernizing the facilities. But the expression of responsible con-

cern and imagination went far deeper: "Send more local children to school to become nurses and doctors"; "Clear out the storm sewers to prevent big lakes in our streets after rains and clear the trash out of the vacant lots"; "Poor people should have evening clinics at City Hospital"; "The government should sponsor regular exterminations of pests in both public and private housing." Perhaps no professional before or since has asked these Roxbury citizens what they thought about their medical care or what they would do about it. But I maintain that only through exchanges of this sort can we intimately understand the community and its health issues.

I have become convinced that the successful understanding and practice of community health requires a physician who can pledge primary allegiance to the social and political aspirations of the community he serves. We may call him a professional out of respect for his skills, but he must distinguish himself from his professional predecessors by learning and embracing the democratic values of the social movements around him. He must willingly accept as his teachers the poor, the disfranchised, the revolutionary students, blacks, Indians, and all those others whom he might have treated in the past but rarely considered as his equals. In essence, the community health physician has to learn a new ideology of egalitarian community involvement replacing the old notions of aloof, benevolent professionalism.

Medical schools continue to impart the traditional ideology of paternalistic professionalism . . .

cern and imagination went far deeper: "Send more local children to school to become nurses and doctors"; "Clear out the storm sewers to prevent big lakes in our streets after rains and clear the trash out of the vacant lots"; "Poor people should have evening clinics at City Hospital"; "The government should sponsor regular exterminations of pests in both public and private housing." Perhaps no professional before or since has asked these Roxbury citizens what they thought about their medical care or what they would do about it. But I maintain that only through exchanges of this sort can we intimately understand the community and its health issues.

This process of identification with community concerns need not and should not, however, be limited to the relatively cold and passive interview technique. Just last month, for example, the Medical Committee for Human Rights set up a temporary first-aid station in Boston's South End at the request of Community Action for a United South End (CAUSE). We were there to support the squatters in Tent City who had occupied a commercial parking lot for three days of dramatic and imaginative protest against the shortsighted policies of the Boston Redevelopment Authority. It was a great privilege and certainly very educational to be even a peripheral part of this warm community—blacks, whites and latinos working together effectively toward common goals. There were essentially no problems of poor

I should not wish to criticize any educational institution unfairly for reflecting archaic patterns which still permeate our society as a whole. It should be recognized, however, that medical schools continue to impart the traditional ideology of paternalistic professionalism without any real prospect of change. Our faculty here, for example, is 99 per cent white and 100 per cent middle or upper class. This fact by itself teaches the ancient ideology and conflicts with the modern lessons of community health. On the other hand, I consider it significant that my most treasured educational experiences in the community health field occurred under the tutelage of Mississippi sharecroppers and radical community organizers, entirely apart from the medical school curriculum. I strongly doubt that this institution as currently structured and supported can ever, on its own, impart the ideology of egalitarian community involvement.

But it must be learned. Perhaps the best that the medical school can do at this point in history is to encourage interested students to develop their own close contacts with social and political movements in the surrounding society. Where the medical school itself will fail, new groups like the Student Health Organizations and the Medical Committee for Human Rights may succeed in guiding students across the chasm which now separates the conventional professional from the vital community. Without this venture there can be little significant progress in education for community health.

Part One

International Health Activities in the Medical School Curriculum

by Edward R. Shapiro

I HAVE BEEN ASKED to outline for you some of the opportunities in international medicine available within the medical curriculum. Since I have had three quite different experiences in this area, I shall go over them and briefly discuss their implications.

I qualify only as a half-breed Harvard Medical student, since I did my basic sciences at Stanford Medical School. I was involved in a program instituted at Stanford by the Russell-Sage Foundation for the advanced study of behavioral science by medical students. As part of this M.A. program, I was sent to the West Indies for a summer, where I did field work in medical anthropology in a fishing village on the island of Tobago. I was under the direct supervision of a professor of anthropology and was guided into structuring my own program for ten weeks.

The purpose of the program was to allow the student the opportunity of employing anthropologic techniques in a field situation. We were placed in the new culture and assisted in structuring our observations. We were asked to define a problem area, investigate it, and analyze its components. After several weeks in the village living with a native family, I conducted a demographic survey to find out what kinds of people lived there and what they did with their lives. Major areas of possible investigation included social structure, political practices, economic problems, and religious influences. To my delight, however, I discovered that the medical and pseudomedical practices in my village covered this entire spectrum of behavior. Resources included an old lady witch doctor, a complicated and almost mystical bush medicine tradition, exotic superstitious practices, and a reasonably competent government medical clinic. During my stay in the village, I constructed a questionnaire, administered it, conducted many interviews, and wrote a paper on the factors affecting the utilization of the various types of medical care. This was a fascinating and useful summer. Subsequent experiences, however, were less successful.

Giving up the Soviet Union

The following year at Harvard, I began writing letters in an attempt to arrange an elective in the Soviet Union. Having majored in Russian language and literature as an undergraduate at Yale, and planning eventually to specialize in psychiatry, it occurred to me that Harvard's elective period offered me an excellent opportunity to work in a clinical

setting in this area of Soviet medicine, about which very little is known abroad. I wrote approximately thirty letters and had multiple interviews over the subsequent sixteen months. Knowing very little about what is available in the Soviet Union, I was not able to be specific about the type of program I wanted. By the end of January of this year, I had received only vague indications from the U.S.S.R. that they were even considering my request. I was confronted with a combination of the political and pragmatic difficulties of setting up an elective at a distance and in a new area. A clinical experience of this type for an American medical student had never been attempted before in Russia, and bureaucratic resistance was strong. Had I had more time to arrange the program and more understanding of the politics involved, it might have been possible to accomplish it. At the very least, I managed to clear some of the obstacles for the next student who wished to try this elective.

Just as I was beginning to give up on the Soviet Union, I was called into Dr. Koch-Weser's office and told of a new program being set up by the Association of American Medical Colleges and the Public Health Service in Israel. The United States has money in Israel (and in several other countries) from the purchase of food which is in the national currency and cannot be taken from the country. Congress recently passed a bill stating that this money could be used for "research training"—a catch-all term familiar to all of you. The program provided for ten U.S. medical students to go to Israel for "research training in public health and in the problems of Israeli medicine." Although it was not at all clear that the Israeli program fulfilled my criteria for a useful elective, I had the necessary credentials and was essentially seduced by the opportunity to spend three months in the Middle East. I was accepted for the program and spent eleven weeks based at the government hospital in Tel Aviv.

The program in Israel had all of the problems of new programs. It turned out to be a super-organized potpourri of experiences ranging from a passive month as an observer on a medical ward in Tel Hashomer Hospital, to a relaxing week with the doctor on a large kibbutz, to two very exciting weeks with a clinic physician in an Israeli Arab village. It also included two weeks of "research training" which for me amounted to a frustrating search for source material in inadequate libraries. The sociologic and cultural stimulation provided by the exposure to the Middle East was quite valuable. The benefits in terms of medical experience and



For the majority of our physicians, who will stay and work in this country, there are less dramatic but just as important insights to be gained from an experience abroad. In the United States today, we face a tremendous problem of unequal distribution and availability of medical care. Some of the problems of distribution stem from the fact that we have a multifaceted, indeed, international culture within our borders. Although not impossible, it is difficult to become involved in and understand an American subculture different from one's own. The combination of the political, social, and emotional tensions generated in the past few years, and the plethora of social workers, behavioral scientists, statisticians, and the like who are scrambling for elbow room to "understand the problem" make an objective evaluation difficult. An experience with a new culture abroad can develop an ability for objective appraisal of tremendous utility in one's own country.

Let me give you a few examples. During the two months spent in the primitive fishing village on Tobago, I worked in the government medical clinic. I also fished with the fishermen, farmed with the farmers, and drank rum with the drinkers. The type of medical care available in the village and its utilization represented a microcosm of the larger society. The political and economic reasons behind the social immobility of the people, and the traditional and social reasons that lay behind their choice of medical care source became clear after I had been accepted as a member of the community. The natives, unhampered by categorical resentment or historical mistrust—two reactions often encountered in this country—were easily interviewed, and information was relatively quickly obtained.

Interviewing the witch doctor

A good example of the kind of rapport I was able to achieve is seen in the succession of interviews I had with the old lady witch doctor in the fishing village. Having spent many days in the government medical clinic, I had established a widespread reputation as the American doctor. After becoming acquainted with me, she proposed a deal. She agreed to tell me all of her secrets if I would come to visit her every few days (up a tremendously steep hill) and let all the villagers know that the white doctor was learning from her. I readily agreed and learned a great deal about the origin and structure of her particular type of medical intervention. Briefly, her story went as follows. She had been a small girl in the village when an epidemic of diarrhea had struck. She found that a particular type of bark cured her and her family. Her reputation spread, and, delighted by the attention she received, she began to use other kinds of herbs and roots. If they worked, she used them again. If they failed, she discarded them. Her pragmatism was clear. She had once worked part time as a doctor's assistant in the city and picked up several very impressive terms, as well as invaluable nursing training. Over the years she discovered that her patients reacted better to her therapy if she added the fancy words and gradually she developed an auxiliary set of incantations to add to her treatment. Despite some initial hesitation she became very open in her admission of the rationale behind her therapy. Her discussion and her patients' reactions were fascinating. My understanding of the effects of tradition and culture on behavior and my feeling for what other kinds of information besides symptomatology the patient brings to the medical interview were

training, however, were minimal. The program suffered from rigidity and over-organization. We were lectured at, talked to, and shown. For students finishing the clinical years of active involvement, an extended passive learning exposure runs the risk of being boring. My general conclusion at the end of the program was that it was better suited to the needs of first and second year students.

My involvement in international medicine, therefore, has included one highly successful experience in Tobago, one failure of communication with the Soviet Union, and one uneven program in Israel. Considering this variability of experience, which may be inevitable with such scattered programs, is it important for a medical student to be involved in international medicine? What can he gain from training abroad that he can't get here? These are relevant questions and I would like to try to give you some of the answers.

The number of doctors who are involved full time in international medicine is small. The problems they face, however, are overwhelming. Millions of people without adequate food, impossible sanitation, epidemics out of control, hopelessly expanding populations—these are familiar pictures, which our battered consciences tend to accept. The world medical community needs sophisticated appraisal of these situations, but exposure to them is only one of the many possible values of an international experience.

vastly increased by the end of the summer. There is a continuity between the physical and the social which we as physicians cannot afford to forget.

Here is another example. In Israel the problems that have arisen with the necessity for integrating Israeli Arabs into the structure of the nation bear certain resemblances to the problems in the United States of integrating a similar, disenfranchised minority. I worked for several weeks in a clinic in an Israeli Arab village and observed the kind of irrational hatred that prevents many Israeli physicians from offering their services. There seems to be an inability to divorce the individual from his society—an inability familiar to many Americans. There is a high birth rate, a tremendous amount of poverty, and a deep estrangement among Israeli Arabs. Although their historical relationship to the State is significantly different from that of American Negroes to this country, the need for their participation and involvement in the future of their country is equally imperative.

It was a striking experience to come from this country, where solutions to an integration problem seem so out of reach, to a country where the problem of merely initiating discussion is so overwhelming as to make our derangements seem trivial. An Israeli Arab, though a voting member of the community, is allowed neither to hold public office nor to serve in the army. With the annexation of the new territory, one-third of the nation's population is Arab. The Arab is also involved, both traditionally and emotionally, with the hostile encirclement, which, like the Damascene Sword, threatens Israel's very existence. To reconcile this position with the vital need for discussion and eventual accord is difficult, and the lengths to which the Israeli government is willing to go to accomplish this goal are impressive.

I experienced a feeling of *déjà vu* as I sat with the Israelis listening to the news of the burning, plundering and rioting in our cities following the assassination of Martin Luther King and saw how completely hopeless they felt the situation was. It was strikingly similar to the undue pessimism felt in the U.S. as we watched the television films of the approaching Arab legions before the six-day war. The intellectual distance achieved by this kind of insight provided me with a much more realistic appraisal of the immediate social situation in our country.

The international crime of seducing foreign physicians

International medicine has another aspect which I should mention. Foreign doctors come here. What for me was an experience that deepened my understanding of the problems at home is for them an overwhelming temptation to abandon their homes. Fully one-half of American house officers come from countries with health standards below those of our worst areas. The moderate propaganda gains we make by sending medical aid abroad are more than overcome by the international crime of seducing foreign physicians. Many physicians in Israel would have considered our program there worthwhile if only one of us had remained behind. In the United States, we capture foreign doctors by the thousands.

driver. In the West Indies he serves a long period of indenture. The physician in America, despite his complaints, appears to foreign observers to live the good life. This however, is not all we have to offer. We must restructure our medical exchange programs to provide more useful training. The futility of training the Malaysian physician in multiphasic screening techniques is apparent. We can, however, offer him practical techniques for the dispersal of information as well as advanced epidemiologic methods for defining and limiting disease. Training programs can and should be adapted for each country represented. We should cooperate with each foreign country in terms of strengthening the incentives for returning home. This is not an easy task, but it must be done. Students here can learn from the differing viewpoints of the visitors, and the meaning of "exchange" will be fulfilled.

I feel that there is a need for an international medical exchange and that such programs should be continued and enlarged. The danger of seduction, however, should be recognized—it is a double-edged blade. For Americans, the glamor and excitement of foreign travel is distracting, and for foreigners in America, the good life is, in essence, captivating. Both the American medical students abroad and the foreign students here can be exposed to ideas that will equip them to handle more effectively their problems at home.

* * *



The gulf of resources and technology separating the

SINCE 1961 the Department of Nutrition in the School of Public Health has sponsored a summer program in Latin America for second-year students interested in international medicine. To date more than forty students have participated in this program, all but two in Colombia. A primary object has been to provide the sophomore medical student—as yet unhampered by research commitments or clinical responsibilities—with a *multum-in-parvo* exposure to the public health problems of developing nations, in the hope that this exposure will motivate him to pursue his interest in international medicine during the fourth-year elective period. A less explicit, though in no way concealed, purpose has been to orient the participants towards careers in the nutritional sciences.

Nine members of the Class of 1969, myself included, were selected to participate in the 1967 Colombia Summer Program. During the spring semester prior to our departure we attended weekly seminars in the Department of Nutrition and devoted varying amounts of extracurricular time to the acquisition of fluency in Spanish. At the time of selection, two of us spoke reasonably fluent Spanish, and two others were not unfamiliar with the language; the remaining five were determined to close the gap—and, indeed, they did.

We converged on Bogotá from Mexico, Jamaica, New York City, and Miami towards the end of June for a three-day period of orientation and acclimatization. A short course in clinical methodology, presented by the staff of the Colombian National Institute of Nutrition, rounded out the program. In accordance with their previously expressed preferences, three students remained in Bogotá. Three others established themselves in Medellín, Colombia's second city, a center of commerce and industry situated to the northwest of Bogotá, and another trio proceeded on to Apartadó, a five-year old boom town of some 20,000 inhabitants in the tropical Urabá region on the Caribbean coast.

In Bogotá and Medellín, Colombian physicians associated with the National Institute of Nutrition and the University of Medellín, respectively, assisted in the formulation, contributed to the design, and provided for the implementation of student protocols. Joseph M. Miller, '45 a physician at the Peter Bent Brigham Hospital and a Research Associate in the Department of Nutrition, spent several weeks with the students in Apartadó, personally organizing and supervising their activities there.

Student projects ran the gamut from a study of the social development of pre-school children suffering from kwashiorkor and marasmus to an investigation of the efficacy of chlorophenoxyamide and streptomycin (Mebinol) in combating amebiasis. My project concerned the nutritional status and socio-economic circumstances of the families of severely malnourished children interned in a Nutritional Recuperation Center in Bogotá. In addition to recording various clinical and laboratory data in the Nutritional Recuperation Center, I interviewed each mother in her own home in an effort to

obtain reliable information about living conditions and family alimentation. On the basis of the clinical and laboratory data and in the light of my "home visits," I reached a number of conclusions about the etiology, diagnosis, and treatment of childhood malnutrition in Bogotá.

Participation in the Colombia Summer Program has enabled me to better understand the relation between misery, poverty, and disease—to appreciate the extent to which social and economic circumstances influence morbidity and mortality and the availability and quality of medical care. As regards one's thinking about the physician's responsibility to heal the sick and society's responsibility to provide for the poor and underprivileged, an experience such as that shared by the nine of us last summer in Colombia contributes much food for thought and discussion. Moreover, the medical problems confronting contemporary Colombia and other similarly underdeveloped areas of the world—birth control, chronic malnutrition, the eradication of infectious diseases, inadequate prenatal and *post-partum* care, and the extension of medical and paramedical services to large segments of the population which cannot obtain these services at the present time for a variety of reasons—are not basically different in kind from those which we are now facing in this country.

But I am not attempting to justify international medical activities on the basis of their potential domestic application.

Dr. Rottenberg



"haves" from the "have-nots" is widening apace

Rather, I would argue that the world's health problems recognize neither international boundaries nor mother tongues and that we, as a profession, must do whatever we can to insure that the incarnations of misery, poverty, and disease do not challenge on the field of Armageddon those who would leave them to perish here on earth while seeking to colonize new worlds.

Our national efforts and ability to promote the health and welfare of other less fortunate peoples should not depend on the services of medical missionaries, armed-forces personnel, nor, for that matter, on the talent and initiative of a handful of well-trained internationally-minded specialists in tropical medicine, nutrition, and population control. Fluency in the local languages, familiarity with regional medical problems and the organization of existing public health facilities, and an appreciation for the less tangible but no less important demands of local tradition and political and economic concerns should be established prerequisites for participation in officially sponsored international medical activities; only in this way can the maximum benefit be realized with the minimum expenditure of material and manpower resources.

A second, complementary approach to the same problem involves the training of foreign physicians in American medical institutions; not, however, in an effort to qualify

them to practice medicine in our teaching hospitals, but rather to equip them to care for their own impoverished, malnourished, and disease-ridden populations. Are we not now committed to the training of foreign scientists and engineers in our universities? As increasing numbers of American physicians become acquainted with and skilled in solving the medical and para-medical problems existing in the larger world, a fund of knowledge, which can be reinvested in formal educational activities, will begin to accumulate. To this end the creation of new exchange programs and the enlargement of existing ones must be encouraged. Colombia Summer Programs in reverse should be sponsored by American medical schools. Exemptions from military service might be accorded those physicians intending to specialize in international public health.

The eventual cessation of hostilities in Vietnam, coupled with the increasing clamor for national reconstruction at home, may well usher in an era of neo-isolationism in which existing international medical programs will be drastically curtailed or discontinued—a consequence of the widespread belief that this nation can survive indefinitely as an island of peace and prosperity amidst an ocean of misery and discontent. There is even now in this country a general reluctance to acknowledge that the gulf of resources and technology that separates the "haves" from the "have-nots" is widening apace. Thus, an extraordinary effort may be required in the not-too-distant future to preserve the status quo.

An oft-repeated criticism of international public health activities is based on the argument that fundamental economic and social ills are primarily responsible for the medical and para-medical problems existing in developing countries, and, therefore, to be truly effective, such programs must be predicated upon economic and social reforms. This argument I believe to be specious since it discounts as irrelevant the importance of popular dissatisfaction, engendered by the repeated demonstration of efficacious remedies for endemic ills, in demanding and securing such much-needed reforms. The knowledge that morbidity and mortality from many diseases can be drastically reduced or entirely eliminated by simple prophylactic measures and that multiple unwanted pregnancies—which all too often lead to septic abortions or, in the absence of adequate resources, propagate a malnourished, intellectually handicapped citizenry—can be avoided, represents a potential force for change that cannot long go unheeded. It is in this context that the American physician is uniquely suited to make a lasting contribution to world health.

Thanks to the foresight and determination of Dr. Fredrick Stare and his colleagues in the Department of Nutrition, the Colombia Summer Program has served through the years to further the determination of Harvard physicians to contribute their talents and energies to the creation of a healthier, happier world.

'58 Classmates



Medical Education and Its Effect

I AM particularly glad to be here this afternoon because in these days you don't often see college presidents away from their campuses. As a matter of fact, many are physically unable to leave, even if they dared. For instance, I don't see Jim Dixon of Antioch and the great class of '43B. As a matter of fact, I don't even see Nate Pusey here and I always thought the Medical School was part of his Harvard University. I can only testify that the few of us who were allowed out are terribly grateful.

The earlier speakers were most interesting in their glowing descriptions of medicine today and tomorrow, with all the electives, the time and even credit for research, and the foreign experiences. (Do I gather also for credit?) Perhaps someone still living in yesterday, someone from the 25th year Reunion Class should provide the perspective that lets you see the turning wheel of progress.

In 1939, essentially we had no electives. Later there was a choice between a combination of three months of medicine and two of surgery, or the reverse. Conceivably there might have been a choice among the four hospitals but the continuously glamorous Dorothy Murphy always took care, so skillfully, of that remote possibility of an opportunity for choice that many of us even today believe the ideal form of government is a benevolent female despot. We were all so naive that it seemed to us a wonderful curriculum. So completely did it elicit our enthusiasm and engage our attention that we never even thought of asking any questions about it. In our defense, perhaps, we were kept too busy; perhaps we overly worshipped the engaging humility of our professors who steadfastly proclaimed their own ignorance.

It may seem incredible but we too did engage in research, squeezing it in here and there, now and then. We were so primitive we never thought of asking for special time or special space. Why, we didn't even ask for a technician! We too felt these were some of our most valuable experiences. It just never dawned on us that what we were doing might be marketable as credits. No, please; no pity, no sympathy.

That was 25 years ago.

Now without wishing to appear too sere an alumnus, we too had a good many foreign experiences. For example five of us worked one summer in Peru on *Verruga peruana*. We too learned Spanish. Unfortunately in those days the only person who would teach us Spanish at six o'clock in the morning was a German who spoke no English. Hence we learned Spanish in French and German! Foolishly we did not make money, we didn't break even and, frankly, we even lost money, but worse than that, got no credits! How little we knew, but to hear us talk about it, you'd think it was one of the great experiences of our education. Speaking only for myself, I have the strong impression that we all thought the Harvard Medical School was a magnificent experience, totally engaging and completely fulfilling.

Perhaps these gentle remarks will provide some perspective on the turning wheel of progress. But whether you conclude the motion of the wheel is forward or backward, or just spinning, the success of the sarcasm depends on whether it revealed a very fundamental point in all education. The effort elicited from student and teacher is more important than any tidy curricular arrangement of knowledge, or methods, or insights. The pursuit is more important than the arrival. It is the overtaking which counts. In some periods of time, great efforts are elicited by mimesis. That was true in our day. In other periods, great effort comes because of major participation—by faculty in administration, by students in curriculum. I think we are now in such a period here at Harvard and all over the world. The important asset we all desire is the ability to recognize our own era. I only hope that your changes will attract the same or a greater degree of engagement, and will give you a similar sense of fulfillment, which we all so deeply, albeit sometimes nostalgically, cherish.

Now on this subject of *Medical Education and its Effect on Society*. That's a tender, dainty, delightful little biteful! The long and short of it is that the effect of medical education on society is not nearly great enough, and unfortunately, the



Upon Society

by Calvin H. Plimpton '43B

effect of society on medical education is almost negligible. Potentially, of course, the interactions between medicine and society can be very interesting. These contacts between systems come in all varieties. If there is bilateral responsiveness, and if you were talking about individuals, you might say love. Microbiologically, you might call it symbiosis. I am not sure what you call it on an ecological level. But with sensitivity, such interactions can be very creative. If there is no responsiveness, the relationship becomes destructive.

Part of this responsiveness among living creatures and living institutions depends on a need for change and an ability to change. And the source of the stimulus for change is important. When we institute a change ourselves, it is regarded at its best as creative, and at its lower levels, as paternalism. When the change comes from the outside, we feel threatened, for we have been pushed and have lost control of the ball. In educational circles, failure to respond leads to student power instead of student participation. In medical terms, patient power might replace participation. In medicine, of course, failure to anticipate needs for change can lead to what is called socialized medicine and to some, this is indeed a threat. Too many institutions make the mistake of only responding to pressure, trying to gentle it, instead of creating pressure and arousing change.

In more flip terms with an analogy to individuals, it is like the man who waits for the girl to make a pass at him, or since coeducation was introduced with the class of 1943, like the girl who waits for the boy to make the first move.

Consider the interaction between the individual doctor and his patient. It is interesting to notice what patients remember about their physician. Frequently they do not know much about what he did or how he did it. Long after they have forgotten whether it was a transverse or vertical incision, they will remember what he said. They do not remember him for his skill, his balanced use of electrolytes, his subcuticular stitch. They remember him as a man and recognize him as a person. He may have saved a life, and

should be entitled to everlasting gratitude, but we all know gratitude is not a truly viable emotion and has a half-life of little more than one post-operative office visit. Any viable gratitude is not for what he did, but rather for what he is. As Emily Dickinson said, "I was helped as if a kingdom cared." Since the awareness that someone cares can be very integral in any healing process, the attitude of the physician in caring can be exceedingly important, and to the patients perceptions more vital than his medical or surgical skill. The extreme statement of this point of view toward the physician comes from one patient about a man who must have been very great, indeed, either as physician or charlatan, "I'd rather die under his care than that of any other doctor I can think of."

This means, of course, that medicine is a very real and significant continuation of the liberating arts. Society needs and wants this kind of humanism, where values are related to the emotions, to the intellect, and are submitted to the strengthening force of continuing inquiry. Much of what is expected from medicine is help for that period between "having done what one could, they suffered what men must." The need for doctors is for more than science can cure. The need for help is for what science cannot cure.

Looking at medicine from the point of view of society, what effects are expected? Fortunately this subject has been so adequately reviewed by Dean Ebert in *Harvard Today* that I am only going to discuss it tangentially. I admit that the definitions of health—be it a negative quality such as absence of disease, or a positive quality of complete fulfillment—leave a good deal to be desired. The one is not enough, and the other suggests the controlled environment of a pure tissue culture of emotions. Certainly there are going to be many changes in the activities of a doctor in the future. He can no longer hope for the authority of some holy man whose word is law. Unless he is exceedingly wise, the doctor is going to be bought and sold like any other technician or mechanic, even as though he were called lawyer, investment counselor, or executive. His work will be supplemented by a vast array of



The need for doctors is for more than science can cure; the need for help is for what science cannot cure

para-medical services. There will surely be an increased delivery of health care. There will be an effort to get the best medicine out of the ivory towers onto the streets and into the communities, be they rich or poor. Private institutions, like Harvard, have for a very long time been public trusts and need to accept this responsibility. And conversely one would hope that some of the virtues of the community would flow back into the ivory tower. The interaction would hopefully always be two-way.

Articulate a Utopia

Society, I think, expects medicine to articulate a Utopia. The ideal has not been considered. Given a carte blanche, most of us have never thought of how we would like to see society grow. We do not really have a goal beyond fewer wars and lower taxes. Robert Frost was as specific as anyone. Whenever I mentioned the clinical aspects of Emily Dickinson's poems, he would always quote:

The Heart asks Pleasure—first—
And then—Excuse from Pain—
and then—those little Anodynes
That deaden suffering—

And then—to go to sleep—
And then—if it should be
The will of its Inquisitor
The privilege to die—

There are not many who can be that articulate and some may not approve of that goal. My worry is that we have not really spelled out any sort of goal at all. There is an important difference here between the older and the younger. "Your old men shall dream dreams, your young men shall have visions." Despite Martin Luther King's eloquent cry "I have a dream," a vision is more apt to move than a dream and what we need in these times are more visions of what might be, of what we hope to be, and what we want to be. We need a vision so powerful that it will move us. Society has a vague amorphous dream, but it rightly expects us to provide the vision.

Universities are one of man's greatest and hardest institutional inventions. They have outlasted governments and many religions. They represent one of our greatest hopes for creative change. They have the leisure to think instead of having to squeeze out a solution by the pressure of the moment. They have the time to ask the fundamental question so that while the path to progress remains difficult it becomes at least visible. They have the resources in minds, books, and laboratories to substantiate the validity of an idea. Although the traditional missions of universities—to maintain standards and preserve traditions—have sometimes overbalanced their mission to grow in understanding, and hence to change, as institutions they are the most hopeful instruments for change.

Society is right in expecting them to show leadership in this area.

Society is entitled to be irritated that universities have not changed. This is a cause for unrest throughout the world of academe. If this situation is only half as bad as we read, it obviously didn't take place overnight. The disease has been there for a long, long time and from my point of view began sometime between when we graduated in 1943, and you seniors entered in 1964.

Here at Harvard we can be proud that we have been semi-pushed and have semi-pulled out a new curriculum. But that is only going into effect this fall. Should even we also admit that it should have started sooner?

If society expects a university to have a vision then it must have one too. It needs something more specific than the hope that doctors will be like the future of mini-skirts. Each solid improvement of the mini-skirt shrinks the use and the need, until finally as these garments are improved higher and higher, they will be over the head, out of existence, and leaving behind only the altogether. Perhaps that is the kind of improvement we would hope for in medicine, but it is not realistic. Society must hone down its vision to more than fewer ghettos, better than more cardiac transplants.

There is one vision that society has—and one to which we should give heed. Society deserves the truth. Sometimes our reluctance has been because we really hadn't thought about a situation enough to see what the truth as opposed to the immediacy might be. But once we have thought, we might heed Emily Dickinson:

Tell all the Truth but tell it slant—
Success in Circuit lies
Too bright for our infirm Delight
The Truth's superb surprise

As Lightning to the Children eased
With explanation kind
The Truth must dazzle gradually
Or every man be blind—

On the other side of the coin, what does medicine expect from society? Relatively little. Lots of money, of course, and a few privileges, in parking, for instance. Essentially medicine really asks for a chance to tell its story, to do its job; a chance to prove itself, to be itself, and with leisure enough to think. This is again a kind of symbiosis to educate society and be educated by it. There is no more fulfilling endeavor.

Again Emily describes it well when she said

Morning is due to all
To some—the Night
To an imperial few
The Auroral Light

We doctors are indeed the "imperial few" for we are in the one occupation which continually stimulates the very appetite it satisfies.

THE WILLIAM O. MOSELEY, JR.

TRAVELLING FELLOWSHIPS

THE BEQUEST OF JULIA M. MOSELEY MAKES AVAILABLE FELLOWSHIP FUNDS FOR GRADUATES
OF THE HARVARD MEDICAL SCHOOL FOR POSTDOCTORAL STUDY IN EUROPE.

The Committee on Fellowships in the Medical School has voted that the amounts awarded for stipend and travelling expenses will be determined by the specific needs of the individual.

In considering candidates for the Moseley Travelling Fellowships, the Committee will give preference to those Harvard Medical School graduates who have—

1. Already demonstrated their ability to make original contributions to knowledge.
2. Planned a program of study which in the Committee's opinion will contribute significantly to their development as teachers and scholars.
3. Clearly plan to devote themselves to careers in academic medicine and the medical sciences.

Individuals who have already attained Faculty rank at Harvard or elsewhere will not ordinarily be considered eligible for these awards.

There is no specific due date for the receipt of applications or for the beginning date of Awards. The Committee will meet once a year in January to review all applications on file. Applicants will be notified of the decision of the Committee by January 31. The Committee may request candidates to present themselves for personal interviews.

Application forms may be obtained from, and completed applications should be returned to:

SECRETARY, COMMITTEE ON FELLOWSHIPS IN THE MEDICAL SCHOOL
HARVARD MEDICAL SCHOOL
25 SHATTUCK STREET, BOSTON, MASSACHUSETTS 02115

REUNION . . .

'18 Judson A. Smith

Of the 41 living members of the Class of 1918, twenty returned for the 50th reunion, fifteen of them accompanied by their wives.

After listening to an interesting Alumni Day program, and enjoying an excellent lunch, we gathered for dinner in the Aesculapian Room at the Harvard Club where we were joined by Dean and Mrs. Ebert. The dinner was good and an abundance of champagne was generously supplied by the Classes of '43 A and B. The occasion was presided over by John Rock with his customary urbanity and, while he extracted an after dinner speech from practically everyone there, the speeches were mercifully short.

On Saturday the Class gathered at The Country Club, in Brookline, for lunch and had a most enjoyable time. All agreed that we should have another reunion in five years and that the present one had been a very well arranged affair, the credit for which, of course, belongs to the incomparable Dorothy Murphy.

'23 Channing S. Swan

What would otherwise have been a truly delightful reunion for the Class of '23 was saddened by the untimely and sudden death of our classmate, Frederick Gregg Thompson, Jr. of St. Joseph, Missouri.

Twenty-eight classmates attended at least a part of the activities against forty-one five years ago, and twenty-eight ten years ago. Distance again was no obstacle. Those returning from afar included: from California, Karl and May Pelkan, LeMoyné and Louise Snyder, and Paul Spangler; from Missouri, Harry Lapp, and Gregg and Katherine Thompson; from Wisconsin, Alf and Carroll Gundersen; and from Illinois, Wilbur Armstrong and Derrick and Elizabeth Vail.

On Friday between the morning and afternoon speeches many of the wives joined their husbands for the luncheon on the Quadrangle. After that a Class picture was taken on the steps of the Administration Building. In the evening cocktails and dinner were at The Country Club in Brookline. The group was welcomed by Ed Benedict who read greetings from those who could not be with us. Jim White, our Class President, made a few appropriate remarks and thanked the committee, following which our classmate, Shields Warren was introduced as speaker of the evening. He gave us a very thorough and detailed analysis of the present status of the continuing studies on the biological effects of the World War II atomic bombings on Japan.

On Saturday a few of us attended the Class Day Exercises and enjoyed the luncheon. At this time word got around that Gregg Thompson had awakened early with chest pains quite typical of coronary disease and had been taken to the hospital. Those classmates and wives who had previously planned to do so went down to Ed and Pat Benedict's most attractive summer estate at Pocasset on Cape Cod for a clambake, remembering well the delightful time we had had in that ideal setting at a similar affair five years ago. Three of the Yankee members took a dip in the water off Wings Neck and after the usual cocktails, thirty-five persons sat down to a really sumptuous meal. The Class is once again very much indebted to the Benedicts for offering their place for such a gala occasion.

Word was received that our classmate, Thompson, had had a severe relapse. The party broke up early, not carrying on into the evening as it had five years before. On the return to Boston we were shocked to learn that Gregg Thompson had died. The Class extends to Katherine Thompson and her family its deepest sympathy for their great loss.

'28 Robert J. Joplin

Thirty-one members of the class of '28 registered for the 40th reunion. In the attractive quarters of the Penthouse of Holyoke Center in Cambridge, classmates and their wives delighted in seeing each other again. While tinkling their glasses and enjoying a delicious roast beef dinner, they caught up on activities and accomplishments since our reunion five years ago.

During the evening we were honored to have Dean and Mrs. Robert Ebert as our dinner guests, and to hear Dr. Ebert mention some of the changes contemplated in the curriculum. A question period followed which gave opportunity for anyone to ask the Dean's opinion on various aspects of the program.

On Saturday afternoon, those fortunate enough to have ordered their tickets in advance, enjoyed a superb Red Sox-Baltimore Orioles game at Fenway Park. With the sun shining and the temperature just right, those phenomenal Red Sox unleashed talents (known by some to have been always present, though sometimes hidden) and demonstrated their ability to win five to one.

Only a short interlude separated this thrilling afternoon performance from our visit to the beautiful grounds of the Oliver Copes for a never to be forgotten lawn party. During the long, soft light of the evening, like to dusk on a Scottish moor, we renewed old acquaintances while admiring the spring beauty of flowering shrubs and plants. Stimulated by a delicious dinner and the warm hospitality of Alice and Oliver Cope, one table burst into song. This fitting climax for a perfect reunion was led by Roger Baker who had come with his wife from Colombia, where he has been on sabbatical leave from Louisiana School of Medicine.

Others who flew in from distant points were Gerald Shaw and Channing Hale from California; Walter Boyd from Washington, D.C.; Eliot Snow from Utah; Gaylord Bates from Michigan; Richard Hamilton from West Virginia; and John Talbott from Illinois. Our departing hope was that those who had been unable to join us this time might meet with us at our 45th, and our rapidly approaching 50th.

'33 Bradford Cannon

The two-day 35th Reunion of our Class was a great success. Forty-six classmates and 37 wives attended. After enjoying the morning and afternoon programs at the Quadrangle where classmate Dunphy struck a resounding note for those still interested in teaching and patient care, the Class assembled at the Charter House Motel for the reunion dinner. There were brief after-dinner speeches by several classmates. Dana Farnsworth reassured us about the college student of today. Rolf Lium spoke about the administrative problems of an American hospital on foreign soil in a talk entitled "Talking Turkey." Ben Miller gave us a taste of his poetic talents, and Bert Dunphy reminded us of the exciting teachers under whom we had had the privilege of studying in our Medical School days. There was a showing of pictures of earlier reunions to remind us of those occasions and recall friends who were no longer with us.

Saturday was a beautiful day and the setting at the home of Howard Nichols in West Newbury was superb—open fields sloping gently downward from the house to the woods on the bank of the Merrimack River. Our host arranged a show of beautiful Morgan horses for our entertainment. There was much discussion stimulated by the program of Alumni Day on Friday, and also reminiscing about other gatherings of the Class. Refreshments and a delicious seafood dinner were served to the accompaniment of Scottish bagpipes.

'38 Francis M. Ingersoll

Thirty-seven members of the Class of '38 and their families made the Boston scene and proceeded to have a memorable weekend. California, Texas, Maine and many states between were represented as well as Haiti. All listened with interest and delight as Sidney Gellis deftly moderated the morning Alumni Program. He emphasized that it was excellence in teaching that made for relevant learning rather than rearranging or changing curriculum subject matter. After urging recognition of those who have superior teaching skills, Gellis was followed by surgeons Cope,

Dunphy and Leland McKittrick who spoke effectively to this same point.

The Class gathered for lunch in the Quadrangle, following which they heard the afternoon program of a series of talks by members of the student body.

Friday evening 64 members gathered at the Somerset Hotel for a dinner-dance with Dr. and Mrs. Arthur Hertig as our guests. The orchestra was superb—the music being suited to our taste and dancing style. Remarkable energy was exhibited by some.

Saturday was still cool, but the sun came out to shine on the Class Day exercises attended by a hard core of '38ers (among others) who enjoyed the stirring pageant of the HMS graduation and the reading of the Oath of Hippocrates by the whole class.

Meanwhile, down at Rockport the non-hard core compulsives were getting the situation in hand for the sailing, shopping, conversing and restoration of fluid balance in which we were all soon involved! On the grounds of the Emerson Inn, a spirited if unofficial game of baseball was held which to the casual observer seemed to involve much running and intensive searching for the ball in the poison ivy patch. Happily glowing athletes then joined the others at the traditional clambake and were enlivened by stories expertly told by Field, Gellis, and Klopp among others. David and Edith Kopans had made the arrangements for this most successful segment of the reunion.

The reunion ended, as far as I know, with a melodic songfest on the bus returning to Boston, with Cal Klopp helpfully tending to such mechanical difficulties as over-heated bus wheels.

'43A Donald E. McLean

The 25th Reunion of the Inseparable Classes of 1943A and B was a memorable and highly successful event. The

REPORTS

esprit de corps, long an outstanding quality of this combine, has in no way diminished in the past two-and-one-half decades. The indefatigable energy and precise direction of Miss Dorothy Murphy was ever present.

The initial meeting began with cocktails and was followed by dinner at the Harvard Club. Ben Ferris was M. C. for the younger set, and I represented the elder siblings. Everyone stood for a moment of silent tribute in revered memory of our sixteen deceased classmates on this Memorial Day. Our guests, who honored us, were the Doctors Castle, Ebert, Parsons, Spink, Hertig and Enders, their wives, and Miss Murphy. We regret that Dr. & Mrs. Janeway could not be with us due to illness. Jim Jackson, our overworked, underpaid, but greatly appreciated secretary, gave a brief, comprehensive report relating to the achievements of the Class both financial and academic. Dean Ebert's address on the changing picture of medicine and Harvard's response was very apropos of the talks Friday morning. The meeting was humorously adjourned with the unveiling of an original Ernie Craige nude mural, "Ye Olde Median Bar." It was the backdrop for our Aesculapian play 25 years ago, and was devotedly preserved by Diddy and Hathorn Brown. An open ethanol oasis greatly enhanced the enthusiasm of the post prandial gathering and the singing led by Bud Minkler. Incidentally, both classes broke all existing attendance records with '43A taking top honors with the largest number of returnees, including such dedicated lone travellers as Dick Betts who soloed all the way from Spokane, Washington.

Sparked by Langdon Parson's warm and refreshing wit, Friday was punctuated by the stimulating and provocative addresses reproduced in this issue. '43A was particularly well represented by Cal Plimpton, president of Amherst, who gave such a meaningful talk well-

spiced with his inimitable humor.

The Class gift, amounting to the huge sum of \$98,000, was presented to Dean Ebert with the statement that this included the establishment of a scholarship in the name of our late, beloved dean, Worth Halc, who chose us, taught us, and graduated with us. John Nemiah presented the '43B gift of \$90,000, prompting Dean Ebert to remark that he wished he had two such classes graduating every year.

Friday night was a stellar affair and a tremendous success with a dinner dance at the Hotel Somerset. Here we had the opportunity to realize how the years have slipped by for we met some of the very attractive college children of our classmates.

Saturday was equally great with the day spent under sunny skies at the Castle Hill Foundation. The food was delicious, the open bar appreciated, and the comraderie reminiscent. It can truly be said that from the first Thursday cocktail, to the last Saturday lobster, this 25th reunion was a real blast.

We would be remiss to conclude this report without expressing our deep appreciation for the excellent foreword of our '43A booklet prepared by E. P. Richardson, the work of Jim Jackson, the loving care of the currency by Al Friedlich, and time and work of the remaining members of the reunion and fund committee. Last, but not least, a sincere and devoted thanks to Dorothy Murphy for the overall generalship that made things fall so neatly into place.

memory of our deceased classmates.

Dean Ebert commented briefly on new and future developments at the Medical School. The usual camaraderie between the two classes was manifest. Brief reports were given by John Nemiah, '43B, and James Jackson, '43A. Our Class claimed the record for having the person who had come from the greatest distance—Jack Shillingford, from London, England. (Bill Garrida-Lecca wired that he could not attend, otherwise the class could have claimed both first and second prizes.)

The weather was cold on Friday, but despite that the talks in the morning and afternoon were enjoyed by all. The luncheon offered a further opportunity to visit. The combined dinner-dance at the Hotel Somerset was well attended by 78 classmates and wives. Ruby Newman's orchestra recalled those halcyon days of yore.

Good weather returned for the activities in the Quadrangle on Saturday. The afternoon was spent at Castle Hill in Ipswich with the usual athletic contests between the two classes—and an excellent clambake.

All in all it was a most successful reunion. Having the two classes in one year undoubtedly increases the work for the Alumni Office, whose efforts were most appreciated. On the other hand there are twice as many pleasures derived from seeing so many friends. Even Dean Ebert appreciates two classes in one year—two checks.

We hope to see even more members of the Class at the 30th.

'43B Benjamin G. Ferris, Jr.

Some 58 members of the Class of '43B met with the Class of '43A for their twenty-fifth Reunion. On Thursday evening 92 members of the Class, with their wives, had dinner at the Harvard Club in conjunction with the Class of '43A. Dr. and Mrs. Ebert, Dr. and Mrs. Wesley Spink (President of the Alumni Association), Dr. and Mrs. John Enders, Dr. and Mrs. Arthur Hertig, Dr. and Mrs. William Castle, and Dr. Langdon Parsons were guests of the two classes.

Because it was Memorial Day, a minute of silent prayer was observed in

'48 Alfred W. Scott

Two Days of Impressions: How young our President Tom Linger and Vice-President Jim Fahl look after these twenty years; how far some came to join us, such as Billy Taylor from New Orleans; the absence of a few native classmates; the morning program in the Quadrangle which proved considerably more interesting than anticipated; cocktails, dinner, conversations and dancing Friday evening at the Sheraton-Boston; the gracious hospitality of Ed and Mary Frances Gray at their Cape Cod home on Saturday; Bob Funkhouser cruising over night to

bring his boat down from Boston to sail with us; Sig and Avery Gunderson's mobile home for transcontinental touring with five youngsters; Ray Murray's prowess on the tennis court; Bill and Jan McCarty's enthusiasm at shuffleboard; Gary Hough hardy enough to try water skiing in Buzzard's Bay in May; a delicious clambake; and most of all, talking with classmates, discovering shared and differing opinions on medicine, politics, family life and diverse other things.

'53 Edwin L. Carter

Most of the "fun crowd" of our Class returned to the scene of their crimes for the 15th Reunion weekend. The sun did not shine on Friday, but this did not cool the enthusiasm of those trying desperately to recognize fellow cohorts—in spite of balding pates and slight paunches. We mastered the fine art of smiling with one eye while sneaking glances at nametags with the other. Those of us who were brave enough to wander into Vanderbilt Hall found it had been converted into a hippie pad—or so it seemed, judging from the various and sundry beards, hair cuts and dress.

The festivities continued on Friday evening with a dinner-dance at Anthony's Pier 4. We began, of course, with the administration of various pain killing elixirs. And the aging crowd breathed sighs of relief that its members were not called upon to perform the bugaloo or the jerk, but we were content instead to shuffle aimlessly to and fro. Charlie Bauer carried on magnificently despite his fractured hip.

On Saturday, our Class was well represented on the program by Dan Federman who provided a touch of intellectual stimulation to the entire reunion proceedings. After lunch on the Quadrangle, we went to Fenway Park to watch the Red Sox whip the Orioles 5-1.

Following the ballgame, we gathered for a cocktail party in the Countway Library. This appeared at first to be much like a secret meeting because of our difficulty in locating the bar on the 5th floor. Eventually, however, all were accounted for, and, as we concluded our funfilled weekend, we vowed to meet again for our 20th.

'58 Howard A. Corwin

The Class of '58 had 43 members returning for its 10th reunion. The continuing class cohesiveness was demonstrated by the far-flung geographical distribution which was represented in the returnees. Honors go particularly to Stanley Bohrer, who came from Nigeria. There was also a gratifying West Coast representation, with Howard Ricketts from Seattle, and Maury Noble and Rod Starke from California. Howard Adkins came from Idaho, John Lukens from Missouri, John Madden from Chapel Hill, and Guiness Ege from Toronto. In addition there

was the usual representation of the New York, Boston, and Washington axis.

All enjoyed the medical school activities of Alumni and Class days. Following the formal program of Alumni Day, our Class held a cocktail party at the Minot Room of the Countway Library, after which we had dinner at Joyce Chen's restaurant in Cambridge.

On Saturday many convened at the White Cliffs in Plymouth. During the afternoon a heavy fog rolled in but tennis, softball, and golf were still the order of the afternoon. Some strolled over the beaches, but the absence of sun did not help the early year tanning process. A superb dinner-dance with marked conviviality was held Saturday

evening. Attending, in addition to the regular members, was George Spaeth '59, formerly a class member who proposed the toast of health and happiness.

In keeping with the informal spirit of the occasion of renewing old friendships, there were no formal speeches. Joe Burnett, Class President, here from Baltimore, gave a brief welcoming address. Most had read the reunion report, and many of the conversations focussed on catching up with the professional activities of friends and in learning about the growth of progeny.

The experience proved so satisfactory that all who attended plan to return for the 15th, hoping to be joined by many more classmates.

'63 Richard F. Brubaker

The Class of '63 regrouped for its first serious gathering since taking the Oath. Handshakes and warm greetings were quickly followed by stories of the highlights of the past hemidecade. Although clinical, military, and academic achievements were numerous, few boasted of having shed the pallid exoskeleton of residency. The Class reunion picture, in fact, was studded not only with the white columns of Building A, but also with the current mode from the Brigham's haberdasherie, and dotted with an occasional handkerchief of gray by Bellboy. Keith

Lindgren, who had come to the HMS 5th reunion in preference to his Harvard undergraduate 10th reunion, said that he felt more at home with residents than with bank presidents.

But while the Class of '63 found itself in this awkward adolescent period between learning and earning, it had other things to boast about. No one could help noticing the beauty and charm of the lovely wives, many of them new. Bill Casarella had been willing to commit himself on paper to that effect, and those who met Candy could heartily agree. Those of us who

failed to be so descriptive in the reunion report were reminded how nice it would have been to state the obvious.

Both the Friday cocktail hour at the Countway Library and the Saturday dinner-dance at the Harvard Club were filled with the renewal of warm friendships. For many it was a good chance to discuss the skeptical and the hopeful aspects of job hunting, inside and outside of Academia. Everyone agreed that the 5th reunion was fun. But all of us expected that the 10th reunion would find more of us with long-term commitments and permanent addresses.





Class Day 1968

IT TOOK FOUR YEARS, but it finally happened. The sun shone on Class Day! One hundred and fifty men and women recited the Oath of Hippocrates as parents, relatives, friends, and reuniting Alumni enjoyed the festivities on the Longwood Quadrangle.

There were seventeen members of this 179th graduating class who received honor awards for their work in the last four years.

A. Marshall McBean was given the Harvard Medical Alumni Association Award "in recognition of his all-round ability and well-balanced personality." Dr. McBean was president of the fourth year class, and will be its permanent president. **Michael R. Soper** was awarded the Henry Ashbury Christian Prize, "for diligence and notable scholarship." The Dean's Prize "in recognition of extraordinary academic achievement and unusual promise for original contributions to the field of medicine," went to **David H. Sachs**. For his original work, "Ultrastructural Studies of Serum Macroglobulins," **Bruce W. Chesebro** received the Borden Undergraduate Research Award in Medicine. The Leon Reznik Prize "for excellence and accomplishment in research went to **Melvyn L. Lurie** for his work, "Primary Antibody Response *in vitro*," and to **Ralph M. Steinman** for his research, "Studies on the Fine Structure of Developing Cilia." The Moses Maimonides Prize of the Greater Boston Medical Society "for integrity, perseverance, courage and force of example went to **Kent W. Salisbury**. **Stephen G. Pauker** received the Massachusetts Medical Society Award for "the medical student who seemed most notably to have developed the intangible qualities of The Good Physician." The James Tolbert Shipley Prize and the Soma Weiss Award "for research, the results of which have been published or accepted for publication," went to second-year student, **George C. Fareed**. The Boylston Medical Society Prizes "for excellence in medical dissertations" were awarded to **Ralph M. Steinman**, **Paul N. Seward**, and **William D. Morain**.

The Harvard School of Dental Medicine presented the following awards to its graduating class. The Harvard Dental Alumni Gold Medal "for all-round scholastic excellence" went to **Steven M. Roser**; the Harvard Dental Alumni Silver Medal to **Charles M. Trauring**. The Harvard Odontological Society Award "for the best senior student seminar" went to **Marlin W. Walling**. **Edward B. Seldin** received the Dr. Norman B. Nesbett Award "for excellence in the field of dentistry." The Dr. Grace Milliken Award "for the outstanding paper in the field of dental health" to **Paul D. Cashion**. **Steven M. Roser**, **Edward B. Seldin**, and **Richard O. Shaver** received the Omicron Kappa Upsilon Certificate, awarded by the Harvard School of Dental Medicine's Gamma Gamma Chapter of the national honorary dental society.



Valedictory

by Dean Robert H. Ebert, M.D.

IT IS DIFFICULT to say farewell without seeming trite. During the past four years you have been exposed to a continuous barrage of lectures, laboratories, clinics and conferences. You have been harangued, cajoled, criticized and even congratulated; yet all of you have survived. What do I say to a class so saturated with knowledge? Indeed, has anything been left unsaid? Perhaps what I say isn't so important as long as I do not advocate the overthrow of the Government, the dissolution of private practice, or the closing of the Faculty Dining Room. Perhaps it is the tradition of leave-taking that is important. By tradition the Valedictory at the Harvard Medical School is the "Dean's thing." The Dean welcomes you the first day of School and says goodbye on the last day of the fourth year, presumably symbolizing the continuity of your education. But let me be more serious for a moment and speak to you about the value of tradition.

A week or so ago I spent several hours with an old friend, who is presently a faculty member at a brand new medical school, and he told me about some of its problems. There were the usual problems of space, money and recruitment that are common to all medical schools. But there was an additional problem—*newness*. I had never really thought of this as a problem before, nor had he until he joined the faculty. He suddenly found that many things which one sim-

ply assumed would happen did not happen automatically. Someone had to know how to register students, and he discovered that a Miss Koller did not come as a part of an NIH grant. Schedules had to be made for real students, and he and his colleagues discovered that nothing worked smoothly and easily. Every minor problem was a crisis, and every decision created precedent. He told the story of arranging for the graduation of the first class. Where would the ceremony take place, who would be invited, who would speak? Finally everything was arranged on paper, when suddenly someone remembered that custom dictated the reading of the Hippocratic Oath. Who should read it to the graduating class? Several people were suggested; there was disagreement, factions were formed, and a full-scale crisis developed.

The example is trivial, but the problem of newness is real enough, for both students and faculty at this new school seemed to be in a continuous state of anxiety. The faculty worried because they weren't sure that the students were really learning enough about medicine, and they wondered if students would be suitably prepared for internship. The students in the first class had no one they could ask about the next rung on the ladder. There was no one to say what it was like in the class ahead, during internship and during later life. Everything seemed new and without precedent, and the urge was not to innovate but to conform. The medical students wanted to be like medical students in other schools; the faculty was likely to settle for programs which had worked in other places because the familiar was comforting.

Contrast the attitudes of students in a new school with your own. Whatever you may have thought of the curriculum—and some of you have been mildly critical—you were aware that the graduates of the Harvard Medical School do well in future life. None of you really has to worry about success, for it will be assumed by everyone here and abroad that you are successful.

Consider the advantages of this tradition of excellence and success. It means that you do not have to prove yourself in the same manner as everyone else. You do not have to earn a million dollars in practice to prove what a fine physician you are, since it is assumed that any one of you could do so if you wished. As an accomplishment it would evoke little interest among your classmates, although possibly more in the Alumni Office. We will be pleased to learn that some of you have become professors, chiefs of service, deans and college presidents, but not surprised, and not particularly impressed. The School will be far more interested in the substance of your accomplishments and not the trappings.

None of you needs to be reminded of the challenges that present themselves today. The advances in biology and medical science are minuscule compared to what can be done. The manner in which we provide medical services is in disarray, partly because of the advances in medical science already accomplished. The problems of the city, the ghetto, violence and disaffection press upon us. Developing nations need help but reject the concept of empire, and perhaps we are beginning to realize that massive destruction is not an instrument for the betterment of mankind.

As physicians, your role is to help people, and I hope you will fulfill this role in any way that fits your talents. Whatever you do, worry less about the external rewards of success than the gratification of worth-while accomplishment. I salute you.



Varietas

by Robert Witte '68

ABOUT four or five years ago in the *Crimson* I read an interview with Professor John Finley, the recently retired master of Eliot House, Harvard College. In the course of the conversation, he likened the educational process to a ride on the MTA. You start on the subway train at Harvard Square and go past Central Square to Kendall. Finally, at graduation from college, the train emerges for a brief interval as it proceeds in sunlight across the Longfellow Bridge, before plunging back down into the tunnel of medical school. If we were to continue the metaphor, I suppose that would place our class today somewhere between Andrew Square and Columbia Avenue, where the tracks break into the open again.

When one is approaching the end of a tunnel such as medical school, one naturally tends to muse a bit and philosophize more than usual about the past, the future, and other topics. The Harvard Medical School, in its wisdom, realizes the need of its students for such stocktaking, and accordingly has provided each fourth-year class with a five-month elective period, during which we actually have the time to do a little thinking. A few weeks ago I was availing myself of the opportunity when a third-year student happened by. The poor fellow had obviously enjoyed about three hours of sleep the night before and the whites he was wearing looked to be about a week old. During our brief chat I asked him what he planned to do after medical school. Without any hesitation at all, he replied, "Write novels."

Now for those of you who have never been third-year medical students, I must hastily say that this sort of answer is not particularly unusual. It tends to be most easily elicited either very early in the morning or very late at night, but can be brought on at any time, given an adequate stimulus. Such stimuli may, for example, include failure to notice the large pulsating abdominal mass on physical examination. For most of us, however, the "write novels" syndrome is of short duration, just an expression of momentary disgust. We are now only a few days from the time when our older colleagues will call us "doctor" without the qualifying smile. And I think most of us have a certain sense of accomplishment and feel that medical school was the right choice four years ago.

But there are perhaps a few who would answer the question quite differently. They might also say "write novels," but would do so with a certain sincerity and glint

in the eye that would lead one to believe them. Everybody knows that medical school is an unconventional place for prospective writers to train, and I'm a little concerned lest those of you in this category feel out of place during the festivities today. I should like to reassure you, therefore, that there exists a glorious tradition of medical apostasy. Men of talent, even genius, have forsaken the scalpel and stethoscope in favor of an astonishing variety of pursuits. Indeed, it is an interesting irony that, to the lay educated public, the most illustrious graduates of medical schools are not known primarily for their work as physicians.

John Keats began his medical career at age sixteen, when his guardian apprenticed him to a surgeon. Though he did not actively oppose the move, he was something less than a devoted student. A fellow-apprentice remembered him years later as an "idle, loafing fellow, always writing poetry." At age twenty he moved to London and became a student at Guy's Hospital, where he remained for eighteen months. Apparently he did well enough and passed the qualifying examinations without much difficulty, though some of his classmates attributed his successes to a thorough knowledge of Latin rather than of medicine. It was always quite clear, however, where his true inclinations lay. "The other day during the lecture," he writes in a letter, "there came a sunbeam into the room, and with it a whole troop of creatures floating in the ray, and I was off with them to Oberon and Fairyland."

He assisted at surgery and performed a few procedures as well. "My last operation was the opening of a man's temporal artery. I did it with the utmost nicety, but reflecting on what passed through my mind at the time, my dexterity seemed a miracle, and I never took up the lancet again."

When Keats was not gazing at sunbeams during lectures, he often wrote in his notebook, but what he actually wrote sometimes bore faint relation to the day's subject. One chemistry session, for example, seems to have inspired the lines:

Give me women, wine, and snuff
Until I cry out, "hold, enough!"
You may do so sans objection
Until the day of resurrection.

Keat's medical adventures ended completely the day he came of age. The world remembers him for his activities

The “write novels” syndrome

during the four years between his departure from Guy's and his death at age twenty-five.

Friedrich Schiller's early career was similar in many ways. He entered the study of medicine principally as an escape from the study of law, which he detested. His record in medical school was good, though not particularly distinguished, and after being qualified he was assigned the position of surgeon to a local army regiment in Stuttgart. Evidently the personnel comprising the regiment were mostly old invalids. Schiller showed his enthusiasm for the practice of medicine by sneaking away one night to Mannheim, in order to be present at the premiere of his first play. Soon afterward he deserted his post.

It seems clear, then, that for Schiller and Keats the medical experience was an annoyance at best. Others, however, have reacted quite oppositely. One of these was Anton Chekov. In later life Chekhov remarked that he did not remember why he had chosen to study in the Faculty of Medicine years before. During his creative life, he practiced medicine intermittently but, at those times, intensely. He once characterized his work, saying, "Medicine is my lawful wife and literature my mistress. When I am bored with one, I spend the night with the other. Though this is irregular it is not monotonous and, besides, neither really loses anything through my infidelity." About four years before his death, in a brief but remarkable autobiographical sketch, he enunciated more explicitly some of his intellectual debts: "I have no doubt that the study of the medical sciences has had an important effect on my literary work; they have considerably widened the range of my observations, and enriched me with knowledge the true value of which to me as a writer could be understood only by one who is himself a doctor."

But the writer who has probably made the most of the hidden possibilities in this relation is Dr. William Carlos Williams, surely one of the deans of modern American letters. Williams decided early that he wanted to be a writer. Independent spirit that he was, however, he also resolved that no one was going to tell him what to write. He came, therefore, to the inevitable conclusion that he needed an additional profession that would insure him a living and decided on medicine. After graduating from the University of Pennsylvania Medical School, he interned in New York City and then set up practice in Rutherford, New Jersey. His

practice involved chiefly pediatrics and obstetrics, with a little general medicine as well. Although his stated reason for entering medical school appears to be a rather negative one, nonetheless he remained an extremely active physician for over three decades while, at the same time, remaining at the center of the American literary world. He is of course principally known as a poet, but was also a prolific writer of prose, and in many of his short prose pieces he explores with awesome incisiveness the depths of the relation between patient and physician.

In several passages from his autobiography Dr. Williams comments on the interaction between his two careers. Indeed, he significantly denies that he was pursuing two separate careers at all. ". . . as a writer I have never felt that medicine interfered with me, but rather that it was my very food and drink, the very thing which made it possible for me to write. Was I not interested in man? There the thing was, right in front of me. I could touch it, smell it. It was myself, naked, just as it was, without a lie telling itself to me in its own terms. Oh, I knew it wasn't for the most part giving me anything very profound, but it was giving me terms, basic terms with which I could spell out matters as profound as I cared to think of."

Now I don't think Dr. Williams would have all aspiring writers go to medical school. Nevertheless, the unity of his own creative life may serve to remind us of the diversity implicit in the practice of medicine, a diversity both in what the physician brings to his profession and in what he takes away from it. I think all of us have been struck by the impressive breadth of interest and concerns that the best physicians can marshall in the care of their patients, care which involves far more than the correction of disordered physiology. And conversely, the quality of experience which one takes away from the clinic may be of unlimited richness. There is fertile soil here for anyone's creative imagination, be he interested in writing poems or differential equations.

Williams has commented, regarding medical practice, that "Every sort of individual that it is possible to imagine in some phase of his development, from the highest to the lowest, at some time exhibited himself to me. I am sure I have seen them all. And each has contributed to my pie."

I should like to wish you all good fortune, and may your pies be as rich as you wish to make them.

Kant

Can't Cant

C^{LASS DAY} is usually a day of happiness and abandon. While you are doubtless glad to be leaving here, the Faculty are likely to be a bit wistful—at losing you as friends and in thinking about what we didn't do for and with you that we might have. In this mood, and while agonizing over a proper topic for an address to your class, I came on a *Lancet* editorial which seemed most appropriate; it was called "The Revolting Students." Before your parents take umbrage at my choice, let me remind them that your class gave Harvard the legacy of a useful and partly successful rebellion. I shall define a rebellion as an aggressive rejection of established practice in the service of reform: By the inclusion of reform in the definition, I mean specifically to exclude both "dropping out" and nihilism, which I find selfish and improvident. I should like to take my few minutes, for the privilege of which I am deeply grateful to you, to consider some of the forms of student rebellion and to urge you—not to give it up—but to keep it up.

Student rebellion is not new. Just a few years after Oxford University was founded, a group of dissident scholars left the college and went to Cambridge, where they founded that university. In 1354, on another issue, the streets of Oxford were the scene of a violent confrontation between the scholars and the townspeople. We are left the following account:

"All night the citizens from surrounding towns and villages poured into Oxford, thirsting to crush the hated clerics once and for all. . . . They caught certain scholars walking after dinner in Beaumont, killing one and wounding others. Then on into the University quarter itself, where the scholars defended themselves desperately, fighting from street to street, pouring their bolts and arrows from the windows of beleaguered homes. But the army of townsmen was not to be denied. The students were overwhelmed; their ranks broke, and the fight developed into a total rout. . . . For two days the mob rioted and pillaged and slew. . . . When the pillage was over, the University had vanished, seemingly never to return."

I think you'll agree that this was pretty heady stuff. It's one thing to feel strongly about the curriculum, let's say; it's quite another to give one's life for it. But happily these inflammatory beginnings were not presage of a pattern; student life in England has been much more tranquil than this night would have predicted. The reasons for the comparative quiet of English students since then inhere in the nature of English academic life. The English University was traditionally a community of scholars drawn from the upper classes and devoted to humanistic education. Contact between teacher and student was always close. The students were cloistered together and removed from potentially inflammatory contact with the farmers and workers. Even when industrialization required the development of professional training, the pattern for the educational relationship was set, and little change was needed to introduce a scientific curriculum without undermining the peaceful climate of the colleges.

by Daniel D. Federman '54

Traditional vs transgressive

In Continental Europe the patterns of university life are quite different, and there is a long history of student activism. In many continental universities there is a broad gap between the teachers and the students; the latter attend large lectures, seldom have individual contact with the faculty, and periodically must show up for written examinations which are the exclusive determinant of their progress. Student societies have therefore been widespread and important in the existence of the students. Some of these are what the sociologist, Frank Pinner, has called "traditional" societies, serving to prepare students for their future places in society. These organizations appeal to students with clear career goals such as law and medicine.

In contrast, there are so-called *transgressive* organizations which seek social and political change. These groups tend to develop when the social climate is expanding, as after a war, or when the outlook for orderly change is especially bleak. Students with well-defined career goals are uncommon in these societies and indeed these groups are often more destructive than socializing. These transgressive groups may be closely articulated with non-student associations; in this circumstance, campus issues may have very broad impact.

The current crisis in France is a dramatic example of the potential for generalization in student protest movements. It is sobering to realize that the nucleating event of the French crisis was a student protest against the entry of a single professor to give a lecture in the small University of Nanterre. It is obvious that if anything similar could arise out of student protest against lectures here at HMS the United States would have splintered long ago. In this sense, by giving in to your rebellion against pathophysiology, Dean Ebert may be remembered as the second father of his country. In France, however, the provincial student protest was forcibly put down. This stimulated a sympathy revolt at the University of Paris, and soon all of France was reeling.



In Communist countries, despite the coercive restrictions on freedom, student movements have also played significant roles. The stage is set by the Marxist dogma that student movements are tolerable—indeed, they can be *used*—as long as their interests are subordinated to those of the workers and peasants. This was true in the early years of the Soviet Union, for example, when the Komsomol provided the main outlet, a controlled one, for youthful political participation. There are, however, two sources of deviation for this orderly channeling of student activism. One is the inherent explosiveness of the young—for example, the unintended consequences of the Red Guard movement initiated by Mao in China two years ago.

The other is more subtle but by its inevitability more important. In the early days after a Communist revolution, particularly in a backward economy, the Party's interests are clearly paramount and admission to any position of trust or privilege, such as being a student, depends on active commitment to the Revolution. As the society becomes industrialized and differentiated, however, it requires a skilled intelligentsia. At that time, ability and motivation outweigh political orthodoxy as criteria for admission to higher education. It then follows that students become less conformist in their politics. This trend has given significant impetus to the pressures for liberalization now growing in Eastern Europe.

Higher education in the United States has been notably free of student political activity for most of our history, probably for reasons similar to those mentioned for England.

But all this is now changing. With the emergence of what Clark Kerr called the multiversity, more students of diverse backgrounds are entering college; many universities have sacrificed the pedagogic traditions of the undergraduate college for the more prestigious achievements of graduate education. The schools are larger, and a smaller proportion of students live in dormitories. Combined with the general youth revolt, the restraints on student activism are attenuated, and the involvement of students in intramural politics is but little

removed from an extension to the general body politic. There are many examples—the Civil Rights movement in the early sixties; the Berkeley Free Speech Uprising; the McCarthy campaign in New Hampshire to name a few. There can be little doubt that student activism will increase in this country as it has around the world, for as we have seen, student rebellion transcends geographical and political boundaries.

Now, what relevance has this to a graduating medical school class? I suggest that you can play a strategic role in American society just because of your special status in this evolving educational matrix. Although you are completing medical school today, all of you are going on to further training. In this sense you will continue to be students and capable of maintaining the innovative and rebellious imagination which goes with that role. Simultaneously, however, you will be teachers, for that is the meaning of the word *doctor*—teachers of other doctors, of medical students, of nurses, and of the public. This hybrid role of student and teacher seems to me to place you squarely at four of the problem interfaces which affect our own profession and the society, and I should like to deal briefly with each of these to indicate the role you might fill in it.

The immediate area in which you will have an opportunity to innovate will be in your house staff training. The people of the United States have decided that every patient has a right to a private physician. This approach, exemplified by Medicare, is of obvious value to the patient of the moment, but it poses significant problems for the education of medical students and house staff. It establishes a confrontation between your opportunity to learn and the patient's desire for personal attachment to a physician. In this circumstance, new behavior is required. The physician teacher must exhibit the nicety of judgment which provides personal supervision without pre-empting responsibility. The patient must learn that the finest medical care is found where medical education is active; that being seen by students and house staff is a direct contribution by the patient to the excellence of medical care in his community. But new adjustments will be asked of you too.

You will have to recognize criteria other than your own zeal for assuming final responsibility for patient care, and you will have to join in efforts to establish the new patterns. This may sound obvious, but it is not easy—witness the problem in surgical training.

The continuing education of physicians provides a related challenge. In the past, new information accumulated so slowly and had so little implication for patient care that the practicing physician had rather little need to continue his own education. In the present phase of expansion of scientific knowledge, this is no longer so. To keep abreast of new information, even in the narrow area that you might come to consider your own, a habit of dedication on your part must be established immediately.

But the logistics of this require a moment's comment. It has been suggested that practicing physicians spend at least

Commitment and passion are powerless without insight and training

a day a week teaching and studying at the university center. Although this might be ideal, I doubt it can be the major solution. Rather, I believe that practicing physicians learn best in relation to patients and the problems they raise, and I think the universities and teaching hospitals must accept the responsibility of going to the community hospitals to assist in endogenous educational programs. Effective programs of this nature will require active liaison between the community hospital staff and the medical school faculty.

Community hospitals will be involved in undergraduate medical education as well. We are seriously short of physicians already, and are not producing practitioners fast enough to meet the growing need. Twenty per cent of the physicians newly registered each year in this country were trained abroad, and often at considerable expense to countries which need them badly. But the raw numbers involved are deceptive. The actual supply of clinical care is reduced by the significant number of graduates who remain in research or administrative capacities. Further, the new therapies require more time from the physician for their mastery and safe use, and in addition the physician now needs time for study and continued learning.

It seems to me to follow that we must graduate more physicians; and we must therefore have more teaching beds. The present teaching hospitals cannot provide all of these, but the community hospitals can help. Far from being a burden, this function will vitalize their staffs and the quality of medical care they render. I submit that you who have so recently been students are the best people available to devise appropriate programs based in community hospitals, drawing on their staffs for participation, and intimately enlisting the university's help. The advantages are obvious—the medical students will see a broader range of medical problems and identify career opportunities which are seldom intimated in the university setting; the physicians will learn, since no student benefits as much from a teaching experience as does the teacher preparing it; and, most important, medical care will be improved as the level of intellectual involvement and mutual scrutiny is heightened. The community as a whole will profit from the atrophy of town-gown hostility and suspicion which always impede efforts at rational regionalization of medical care and facilities. But at the *center* of this admittedly halcyon image there must be a physician who insists on being both student and teacher—namely, *you*.

A second area in which I think you can do a great deal gives you a direct stake and responsibility in the survival of our country—I refer of course to the ghetto. The shortcomings of American medicine as a medical care system are magnified in the sad, desperate, black cores of our cities. Economic and social factors are clearly prime issues here, but the shortage of physicians combined with the gap in citizen education and motivation have led to a further and progressive divorce from medical advances. Although most of the publicity has focused on the triplet of jobs, education, and housing, medical care is almost equally crucial. Students across the country have accused the universities of failing

to make the content of higher education relevant to the circumstances of modern life—and I believe the indictment stands.

I wish to suggest that medicine is almost uniquely prepared to serve in this area—to straddle and reduce the black-white gap that threatens our society. I believe that physicians, nurses, and other health workers could represent the least prejudicial instrument for this confrontation. The police and law, while necessary for restraint, are not liable to provide positive rapprochement. On the other hand, good faith and results could proceed immediately from medicine and education. In this connection one must applaud the recently announced decision of the HMS Faculty to bring black students to this school on scholarships, and to review promptly the ways in which Harvard and, hopefully, the other universities, can participate in improving the lives of those in the city. But these are just beginnings; it will require unabated effort on your part as well to produce the enormous changes that are needed.

The final social schism in which your training should be particularly valuable is in the gap between science and humanism. The scientific achievements of our era—nuclear fission, automation, modern pharmacology, the resolution of the genetic code—all provide threats as well as promises, and no segment of society is better able to interpret and reconcile the two than medicine.

This urging that you accept a larger social responsibility than medicine has shouldered in recent years brings me back to the theme of student rebellion and to the title of my talk. Although nondirected rebellion can arrest a negative trend in the society, if only by bringing everything to a halt, it is not likely to provide a positive direction for improvement. Such a change, certainly in a complex and highly differentiated society, requires expertise. Commitment and passion are powerless without training and insight, and your role is promising just because it combines both. The German ethical philosopher Immanuel Kant proposed that the ethical act was one the moral of which could be generalized to a universal law. In this light I would condemn rebellion which is randomly destructive and uninformed by normative commitment, but I urge you, in your transition from student to teacher-student, to preserve and generalize the student's tradition of directed moral protest, coupled with prescription for improvement.

It will not be easy. As you acquire increasing personal and professional responsibility, the temptation grows to abandon your initial zeal for reform, to say you can't. But the time for redress of our failures is short. The good ideas, the good will, and the urge for reform which students are generating must not become cant, which Webster defines as insincere or meaningless talk or hypocrisy. In preventing this, you can play a crucial role. If you do, you will add immeasurably to the pride your parents rightly feel today, and to the high sense of privilege the faculty feel in having known you first as students—henceforth as treasured colleagues—and always as our teachers. Good luck to you all.





The teaching opportunity in surgery is one of great clinical impact in our era of increasing laboratory distraction. Here Dr. Moore makes a Wednesday afternoon "chief's rounds" with his Principal Clinical Year students.

Society . . .

by Francis D. Moore '39

MUCH AS HE MIGHT LIKE TO, the surgeon does not treat people in crowds—just seriatim. Among the fields of applied human biology, surgery has always been one most intensely concerned with the individual as distinguished from the group. Unlike preventive medicine, public health, or pediatrics, surgery rarely deals with problems of whole families or populations. Exceptions might be found in such trauma-epidemics as war or civilian disaster, where surgery has developed a tradition of effective organization for the simultaneous treatment of hundreds or thousands of casualties. And yet, although the occasional surgical philosopher can discern a group significance, or even a preventive aspect in surgery, these have not been main concerns.

With word in the public press of Dean Ebert's plans for opening new social vistas for the Harvard Medical School, with the gynecologist increasingly concerned with fertility management and the control of the world's populations, (and with the internist taking to the airwaves to tell people about present illnesses or future problems), the surgeon naturally asks how his own discipline fits into this setting of renewed social awareness.

Then, as the surgeon pauses in his work and searches for the nub of his social problems, he does not have to look very far. His responsibility is very simple—almost a platitude—it is to provide the best possible surgical care for all. This is both a social responsibility and a technical objective. Recent enormous increases in the scope and clinical effectiveness of sterile tissue dissection under anesthesia make the objective more desirable than ever before, but, because of its very complexity, less easily realized. At present, the social responsibility is not being fulfilled and the technical objective is distant.

When a member of the medical faculty enters the hospital with his newly discovered carcinoma, he hopes that his surgeon will be aggressive, so that the tumor will be entirely removed; circumspect, so that an organ will not be removed unnecessarily; adept, so that the tissues will heal without unnecessary pain; and meticulous, so that there will be no

Last spring Dr. Moore completed twenty years as Moseley Professor of Surgery, and Surgeon-in-Chief at the Peter Bent Brigham Hospital. A year ago he was given a "sabbatical six months" to review some new technical aspects of surgical work, and at the same time to look at the organization of surgical hospitals, surgical departments and faculty group practices. This article expresses some of the thoughts that seemed especially important to Dr. Moore, as he reviewed his many visits over the country.

Surgery . . . Seriatim

infection. And he hopes that his anesthetist will be so expert that the process of sleeping and waking (as well as the texture of his lungs on the sixth day) will be equally smooth.

Two weeks later, when that same professor leaves the hospital, some of these intense concerns will have slipped from his mind. The moment of jeopardy seems long past. As he returns to work, he is likely to forget that the perfection he sought on that day of hospital admission is the same perfection that all patients seek and deserve in all walks of life, and in all conditions of wealth and poverty. It is our job as teachers of surgery to see that all patients receive care of this highest quality. For a distressingly large fraction of our population, this ideal is rarely attained.

The technological explosion continues in surgery; it is one of surgery's proudest achievements. But it has blown a wide gap between the best of surgical care and the care that many patients actually receive. To close this acceptability gap, university teaching hospitals must do more than set an example; they must identify and define the essentials of quality in surgical care, teach it, disseminate it, and hold the mirror up to their own work so they can be certain that their example is valid.

Trauma Only?

IN 1952, A NOTED TEACHER of surgery whose work on thyrotoxicosis was being superseded by the use of radioactive iodine, was heard to remark that the surgery of the future would be largely concerned with trauma, and that better means would be found to deal with all other disorders. As he was expounding this prediction, the prototype pump oxygenator (soon to revolutionize the treatment of heart disease) was in operation in a Philadelphia laboratory, and the first kidney transplant (soon to add an entirely new dimension to surgical care) was under way.

Now fifteen years later, that same surgeon, if he came on rounds with us, would find the most challenging variety of problems in all the history of surgery. In one bed is a patient with advanced congestive heart failure getting ready for a

prosthetic valve. In another is a patient with metastatic carcinoma of the liver starting arterial chemotherapy. In another is a patient who was dying of advanced renal failure, whose kidney transplant is beginning to function on immunosuppressive chemotherapy. In another is a patient being readied for bilateral adrenalectomy and chemotherapy for advanced carcinoma of the breast, and with a remarkably good chance of a satisfactory remission. In another is a patient with acute pulmonary embolus, diagnosed by cardiac catheterization and angio-cardiography, who will have simple but effective treatment by ligation and anticoagulants. And in the intensive care unit, a variety of patients with cardio-respiratory problems will have the benefit of the most sophisticated electronic equipment in active therapeutic use.

On the next floor, or in the next hall, or in the next building, are all those other patients with the diseases so familiar in surgical textbooks: stones of gall or kidney, hypertrophy of prostate or adrenal, tumor of colon or brain, with some pelvic fractures or perforated ulcers, thrown in for good measure. For all of these patients, in every hospital in this country, there should be no compromise in our search for the best that applied human biology, through surgery, can offer.

Some Estimates of Size

THE MAGNITUDE OF THIS responsibility can be appreciated from some raw statistics. It is estimated that each year between two and four per cent of the population (approximately four to eight million people) have a major operation. There are about 4,500 hospitals in the country with approved surgical departments, about half of which have approved residency programs in surgery. It is estimated by the American College of Surgeons* that in 1962 there were 47,800 doctors in full-time practice of surgery (out of 268,000 licensed in the U.S.A.); of these, some 33,000 were members of the American College (or in the candidate group). As of September 1, 1967, there were 13,600 men in surgical residency training; as of December 30, 1966, there were 41,600 diplomates of surgical specialty boards in active practice.**

The contribution of Harvard Medical School to this enterprise is quite large and certainly enhances the quality. As an example, in the 1968 membership listing of the Society of University Surgeons, 79 members (or 15 per cent) of the total of 507, are Harvard men—either they are graduates of Harvard Medical School, on the staff at the present time, or have been on the faculty in the past. Of the total membership of the American Surgical Association, listed in 1966 at 491, a total of 86 (or 18 per cent) are, by these same criteria, Harvard men. This is to be contrasted with the fact that Harvard Medical School graduates about 2 per cent of all the doctors who are given medical degrees in the United States and Canada each year. Twenty-five to thirty members (16–20 per cent) of each HMS graduating class of 150, go into surgery immediately. An additional small group enter surgery after medical or rotating internships.

* I am indebted to Dr. John Paul North, Director, for these data.

** Approximately 20 per cent of the surgeons in the United States are thus still in a white suit. It is commonly estimated that these young men do about one-third of all the operations done in the country.

It is evident that the surgical profession in this country brings to bear on a major fraction of human illness a large social resource of hospitals, people, money, and equipment. If the profession is to meet the responsibility this entails, it must understand the magnitude of the national enterprise; its regional and local distribution, its logistic impact on hospitals and communities, and above all the quality of its product in terms of human welfare.

Natural Solutions

NOT LONG AGO a Nobel laureate wisely pointed out that Nature poses no problems, only solutions. This refreshing view provides a good antidote to references found in popular science writing to "ways in which science is conquering Nature." Such references reflect an erroneous interpretation of the very stuff of which science is made. Science does not conquer or circumvent Nature; rather, it shows us how to work within the limitations imposed by Nature. A rocket orbiting the earth does not represent a "conquest of Nature" so much as an understanding of the restrictions that Nature imposes on rocketing attempts, and on the motion of bodies in space.

This relation between science and Nature is the basis of excellence in surgical care. The seemingly artificial setting of the open operation with a sterile anatomical dissection, insensibility to pain, modification of anatomy, or removal of disease does not represent a changing of Nature or even the imposition of new conditions. The research that has made such things possible has been concerned with finding and defining the limits within which the human body will permit surgical operations to be accomplished, and with discovering the solutions that Nature so nicely provides for the problems posed by our intended invasion of the living organism.

These solutions have to do with the tolerance of tissue for handling and for sutures, the establishment of asepsis, maintenance of defenses against bacteria in accidental injury or infection, tolerance for drugs and anesthetics, healing of wounds when blood supply is altered, fluid requirements when blood volume is reduced, renal function when infection is present, pulmonary function under ventilatory assistance, cardiac metabolism with the ventricle open, blood vessels growing from an implanted mammary artery, the immunology of tissue rejection, and so on, ad infinitum. Possibly more than most of his colleagues, the surgeon is treading a narrow path delimited both by the permissiveness and the restrictions of Nature. Departures from this path are most costly to the patient, the price being reckoned in such calamities as cardiac arrest, wound infection, pulmonary insufficiency, renal failure, anatomic damage, paralysis, tissue rejection, tumor recurrence and all the other factors which comprise surgical morbidity or mortality. Excellence in surgery consists of guiding each patient along this narrow path so that he comes out on the other side of the surgical orchard, enjoying its fruits without having been caught in its brambles.

What are some of the conditions that militate against the highest quality of surgical care? Why do we sometimes fail to achieve the best? Many of the impediments to excellence are not peculiar to surgery, but are shared by its sister medical sciences and arts; but many are heightened by the focal nature of the surgical act, and personal commitment of the surgeon.



The surgical service requires a hospital that is a smoothly functioning piece of social machinery; it cannot "make do" in an inadequate environment. Here at the Boston City Hospital a surgeon "gowns up" for an operation in a newly decorated, handsomely equipped operating room.

Components of Excellence in the Surgical Enterprise

The Total Responsibility of the Surgeon

The surgeon himself must bear responsibility for the total welfare of the patient. Of all the components of surgical practice that are essential to its quality, none surpasses this principle in importance.

By its very nature, surgery tends to foster a small focus with high magnification on the operation itself, often to the exclusion of a broader view of the patient's problems, which may range from his anatomy to his personality, from his metabolism to his histopathology, and from his personal habits to his social adjustment. In reviewing the errors of a surgical service for a year, one often finds that a common denominator lies in a narrow view taken by some surgeon at some particular point in time. The full stomach has been overlooked in the focus on the fracture; a Levin tube rather than a nail-and-plate would have averted disaster. The rising potassium concentration has been overlooked in the patient with chronic renal failure and acute cholecystitis; a wiser wait for dialysis would have saved the patient's life.

Although the surgeon works closely with the internist and pediatrician, and daily with the radiologist, pathologist, and anesthetist, the whole constellation of his colleagues must be his trusted helpers. There is no place for interdisciplinary rivalry or false pride in the practice of surgery. And yet, granting this collaborative help, the surgeon can no longer rely on others to unscramble his own difficulties. He must unite and balance the diverse contributions of specialists and consultants for the best care of his patient. Growing knowledge of the biology of surgical convalescence has provided a sort of binding force to help hold together all the different phases of the surgical experience. The concept of responsibility for the total welfare of the patient underlies this important trend.



The research arm of surgery determines much of its quality of excellence, especially in the newer disciplines such as cardiac surgery or transplantation; it is often interdisciplinary, working closely with its sister services. Here at the Cardiac Catheterization Laboratory of the Massachusetts General Hospital, Dr. Charles A. Sanders carries out a prognostic cardiac study.

Adequacy of Institutions

Surgery is based squarely on the hospital and is the very prototype of all the fields of hospital-based medical practice. Recent advances in drugs and medicinal treatments have given internal medicine and pediatrics stronger preventive arms, larger ambulatory clinics, and home care programs, and new agents have permitted even the psychiatrist to return some of his patients to their families. But, since 1846, all the advances in surgery have greatly magnified the importance of the hospital as the essential environment for surgical care. The adequacy of the hospital as a total institution, therefore, becomes both a measure and a determinant of excellence in surgery. Significant advances have brought new patients to the hospital, not kept them out.

Internal medicine can create a world for itself within the hospital, with special wards, research laboratories, and self-contained enterprises. By contrast, the surgeon's world is the hospital as a whole. Every facility is strained when the surgical load is heavy. In some of the large urban tax-supported hospitals, one finds the chief of surgery in desperation because of interference by city and county officials in the operation of his institution. He suffers from an insufficiency of nurses, old operating rooms, a blood bank poorly staffed, an emergency ward in a cellar hole, bacteriology labs that are behind with their reports, lack of funds for a full-time anesthetist, chemical laboratories unable to handle the midnight emergency, and the whole thing covered over, or rather, uncovered, by a severe lack of paint that makes surgical cleanliness impossible. Any shortcomings the institution might have, as a physical or administrative unit, immediately find reflection in surgery before they bring about deterioration in other fields of medical practice.

Hospital trustees and municipal officials must join in accepting responsibility for institutional adequacy, and in the recruitment of strong administrative staffs. The hospital director who must be cajoled, coerced, or tricked into spending money for new equipment might have excused himself on

the grounds of economy—in the days of poverty, parsimony and red ink. But now, with medicare and insurance checks flooding in, and with the overhead from research grants to pad hospital budgets, the least affluent charity hospitals are operating close to black ink. That same hospital director is guilty of some sort of maladministration if he puts obstructions in the way of the surgeon who needs to have a better place to work, better equipment to work with, a cleaner environment, or an adequate staff. Hospital administrators must emerge from their carpeted offices and budget meetings, and awaken to an entirely new role as leaders in bringing to their hospitals the most effective of modern hospital engineering. The course in hospital administration should include environmental bacteriology, electronic instrumentation, and isolation circuitry, as well as the use of computers for collecting unpaid accounts. The clank of the cash register at the outpatient desk can now retreat to its properly subordinate role in hospital administration. There are few problems in bio-engineering that are more urgent than those pertaining to hospital structure and function, and it is the surgeon who most particularly feels the urgency of these matters.

Surgical Organizations

Closely related to the matter of institutions is the organization of the national surgical profession itself. Shortly after the turn of the century, with the founding of the American College of Surgeons, the profession took a strong hand in helping to organize hospitals for improvement of care. Tissue committees, tumor follow-up clinics, improvements in nursing arrangements, and even some attempts to audit hospital effectiveness were instigated from within the surgical profession. This intense concern on the part of the national surgical establishment about the adequacy of its institutions must again be rekindled. In the past twenty-five years, the surgical profession has drifted away from these concerns and has devoted most of its official attention to "training." This has led to the American Boards and the Joint Committees emphasis on the number of years a surgical resident spends in training, or the number of operations performed at a given hospital. Surgery, as a national establishment, seems almost to have lost concern with the actual social quality of the product being produced.

Accreditation either for surgery or for the training of surgeons is based not upon the skill with which a population of sick patients is rehabilitated, not upon the adequacy with which the social need of a community is met, but rather upon the teaching accoutrements, schedules, operating lists, attending staff visits, and all the other trappings of the "training program." The concern has been with the number of operations performed, not with their quality, need, outcome, or the extent to which a hospital meets the needs of its community. In one fully accredited program for plastic surgery, for example, there were many children with disfiguring defects lined up and waiting for surgery; the presiding surgeon simply did not bestir himself to build a large enough staff to take care of his load. Each resident did many operations, so the program appeared to be in fine shape. In another fully accredited program, involving peripheral vascular disease and lower-extremity amputations, there was no provision for an amputee clinic for rehabilitation of the patients. And yet, if the resident "got" enough amputations to do, the Board remained satisfied. It should not be too

difficult to refocus the attention of the national surgical establishment on the issue: does each surgical service fulfill its social need effectively?

Distribution of Surgical Operations

Some planned allocation of surgical resources within regions, especially in large cities and among groups of community hospitals, could make a significant contribution to the quality and organization of surgical care in the United States. There are many surgical operations that are both complex and infrequent. Examples are to be found in such operations as radical forequarter or hindquarter amputations (which may be the only hope for life in young people with bone tumors), hip-joint arthroplasty, operations for arterio-venous malformations of the brain, congenital anomalies of the respiratory and biliary tracts, and reconstructions of the larynx and orbit. The casual performance of such an operation by the occasional operator never yields as good a result for the patient as its performance by a surgeon who has maintained a persistent interest in the subject. In most cases, such an interest can be a clinical hobby in a well-balanced surgical career, and need not constitute another example of super-specialization.

As new areas of surgery are developed, they all pass through an initial period of unplanned centralization. This is an intrinsic by-product of the centripetal tendency of the referring physician who seeks out an "expert" for his patient. We have witnessed this during the past fifteen years in the development of closed-heart and then open-heart surgery, and kidney transplantation. Gradually, as the procedure becomes more standardized, every young surgeon feels competent to undertake the operation, and the community surgical department is not "with it" unless the operations are being done locally. It becomes a community disgrace to send a patient to another city. About ten years ago most hospital trustees thought they were lagging badly unless they possessed a pump-oxygenator and an "open-heart surgeon." Interestingly enough, the drive for this type of expansion came as much from hospital trustees, public relations directors and deans in search of new professors, as it did from the staffs themselves. Many medical schools seeking a professor of surgery in the 1950's felt that he had to be a man doing open-heart operations in order to establish the work locally.* Then a massive reaction set in. In hospital storerooms over the country one may today discover many dust-covered pump-oxygenators. The professional staffs of these hospitals were finally able to convince the trustees, directors, and deans that this type of surgical work requires a lot more than a machine or a capable surgeon. It requires close medical-surgical collaboration, cardiac catheterization laboratories, a well-equipped X-ray department, research backup, intensive care units, and a lot of other items that hospital administrators found rather expensive.

A modification of the ancient free-enterprise system of surgery, providing some centralization for these complex technical procedures (or those rarely performed) would assure the patient of access to the finest treatment, and would protect him from the inexperienced surgeon.

* In the 1960's he must be a transplanter!

Hospital Chauvinism

Hospital chauvinism is a closely related vice that militates against the regional reference of patients, or the sharing of responsibility for unusual operations or exceptional diseases. It is a vice in any form, but especially so in surgery. It is shocking to bear witness that in our own community there have been cases in which a patient has been held in one hospital against his best interests, because of a narrow-minded jealousy on the part of that hospital staff concerning the activities of some neighboring hospital, construed to be a rival.* As with centralization, there must be a happy medium between extremes; healthy rivalry between institutions to achieve excellence in care is one thing, chauvinistic withdrawal from the sharing of responsibility is another. I remember the patient with a localized electrical burn and anuria who was not transferred for dialysis because the staff of his own hospital was reluctant to try a new method originated at another hospital. The tendency of hospitals to view patients as their own property is nowhere better exemplified than in the famous incident where a hospital, faced with a disaster, did not wish any outside interference—"this is *our* disaster."

Overcoming Affluence: the Problems of Ghetto Surgery

Surgery has become the most lucrative of the medical fields. The regulation of surgical fees is the first target of Blue Shield and Medicaid; payments for surgical care provide the backbone for medical school finance in those institutions where patients' fees are transferred directly to university or department budgets. In every large community there are a few surgeons whose incomes are competitive with those of leading businessmen. This aspect of surgery—its effectiveness in generation of income—is a threat to its quality. Because many right-wing economists would challenge such a view, let us look at this matter in some detail.

Most patients who are able to pay for care present themselves and their illnesses to the most successful practitioners of surgery. These surgeons, therefore, have little time left for the needy. This is not the result of cupidity on the part of the surgeon, but the simple response to the pressure of numbers—a pressure intensified by the urgent nature of operative work. In effect, the distraction of private patients takes the experienced surgeon out of contact with the underprivileged people of our society.

It is no surprise to the readers of the *Bulletin* that the time has long passed—if indeed there ever was such a time—when one could truthfully maintain that "the poor people get the best care." The advantages of modern surgery may be lost to a patient in humble circumstances who, because he is indigent, is subject to the unskilled performance of a difficult

* In the recent rash of publicity about cardiac transplantation, many newspaper reporters could not believe that the Harvard hospitals were all collaborating on transplant research; that the liver transplanted in a Brigham patient came from the MGH, that lymphocytes typed for both were done in California, and that surgeons from all these institutions meet periodically, both in this country and abroad, to maintain a spirit of common enterprise rather than petty institutional rivalry.

and complicated operation. We cannot continue to accept this situation as normal behavior, or a normal by-product of "training." Skill and experience must be made available to *all* patients through the participation of the most experienced members of the profession. But this must be done without destroying the learning experience for the younger members. It is possible to tread this narrow line only if the whole staff of a teaching hospital, from the President of the Board down to the junior intern, understand the daily problems of achieving supervision while at the same time maintaining education. This is a matter of yielding responsibility while at the same time accepting participation. The re-establishment of high quality in surgical care for the poor of our cities requires a change in the social values of those responsible for such care, and in particular, it requires a devoted surgical staff at all levels and ages. Every patient deserves to have an experienced surgeon overseeing the strategy and a few of the tactical details of his care, even though the operation itself and the daily treatment are carried out by the most junior intern.

The large city, county and state hospitals demonstrate to the most marked degree the withdrawal of the senior practitioner from the ward arena. Fifty years ago, the "University Hospital" was built to give skilled care to the less wealthy patients of the population. It is an interesting commentary on our affluent society that a new "University Hospital" currently under construction in New York is being built specifically so that the attending staff can bring private patients to their students. This is in response to the need of the students, both graduate and undergraduate, to assist attending staff in the care of sick people, rather than to view the senior attending staff as visitors who occasionally make speeches about unusual cases.

Each year it is my privilege to speak to many young students of surgery—from third-year medical students to chief residents. Talking to these young people about surgical quality in the ghetto hospitals leaves no question in my mind that we have a severe problem in this respect. Any reader of the *New York Times* during this past year has found repeated evidences of dissatisfaction with medical and surgical care in large city institutions. The problems are often unrecognized or unadmitted, and stem from many factors, social and economic as well as professional. The senior surgeon who has just spent six hours digging a pancreatic carcinoma out of the abdomen of a Bowery derelict will hardly admit that any problem exists in the provision of fine care to the poor. Hasn't he just donated his time most generously to help an indigent patient? Unfortunately, while such episodes are sentimentally attractive, one has to review the quality of surgical care of large numbers, groups, and populations, in order to make any judgment on this point. This has not yet been done, and it needs to be.

Research and the Clinic

The most notable "brain drain" of the past twenty-five years has been from the wards to the research laboratories. Surgery has suffered this difficulty to some extent, though possibly not as severely as other fields. Excessive attention to laboratory research and the associated procurement of Federal grant money creates a divisive force in any hospital. If care of the highest quality is to be achieved, there must be some softening of the current emphasis on research as the

sole criterion for academic promotion, and on research finance as the principal source of academic support.

It is disappointing to discover that patients cared for on a research unit are getting the best of everything, while on the regular wards others with the same disease are in an inferior setting with less attention from experienced doctors and with poor follow-up. Not long ago a visitor from Great Britain, working at one of our Boston hospitals, expressed shock at finding one small group of patients with a commonplace disease—chronic pyelonephritis—receiving very special care because they were part of the research study, while other patients with the same disease were cared for in the most gross and inadequate way simply because they were not part of the research group. Hospital staff executive committees should not tolerate this. If one is going to conduct clinical research, then its benefit should be extended to all patients within the scope of the hospital. The skilled investigator must somehow have an opportunity to bring his wisdom to bear on *all* the patients afflicted with the disease he is investigating. In the words of the familiar platitude, "only where the care of the patient is conducted with wisdom and mercy, will teaching and research also thrive."

This problem can be solved in part by the wisdom of department heads, and by the generosity of deans in making sources of funds, other than those derived from research grants, available to the departments. It is essential to re-establish the criteria of clinical excellence and teaching devotion as a basis for academic promotion, and to find ways of relieving the pressure on departments to pay their junior staff from research grants. He who pays the fiddler calls the tune. Until another source of payment is found, research finance will continue to divert attention away from the immediate clinical problems of the sick, and towards the establishment of over-expanded research enterprises.

Where to Start?

NO ONE KNOWS the extent to which surgical care falls short of an acceptable standard. There is no single, easily measured index, such as regional data on infant mortality, no simple number to demonstrate whether we are lagging behind the countries of Western Europe. We like to think that American surgery is best—but is it applied and distributed most effectively? Some attempt must be made to gauge the magnitude of this problem in the United States. This is a first priority and deserves financial support from some agency such as the National Academy.

Thus, as the surgeon stands for a moment at the door of his hospital wondering where his role in society lies, he is certainly entitled to reflect a bit. But then he might as well stop reflecting, turn around, and walk right back in. His most urgent duties are right there with his patients and his students: they include the organization of surgical services and teaching units; the establishment of regional facilities to promote better surgical care; and above all, the re-establishment of a strong sense of institutional responsibility to insure that everyone in our society who needs surgical care can receive it in its finest and most effective form.

And as the Harvard hospitals in the Longwood area begin a new Joint Venture in the Affiliated Hospitals, we must consider the plans for surgery in terms of the broadest possible reference—that of social effectiveness.

EDITORIALS

Deliberations

In addition to the routine business transacted by the Council during its deliberations and approved by the Association at the annual meeting on May 31, other matters of special significance were discussed. The opinion was expressed that the Council should accept more responsibility than it has in the past for a careful review of its budget—an opinion which was said to be shared also by the administration of the School.

Certain amendments to the Constitution were adopted, with the main purpose of still further clarifying the always cordial relations between the Dean's office and the Association and to effect a direct and reciprocal channel of communication between the two. Both organizations have proliferated in recent years and both are working, interdependently, for the same high purpose. Many members of the Association may not be aware that its staff is on the payroll of the University as is also the case with all of the various alumni associations of the graduate schools and the College; this has come about and has been accepted partly by the demand for conformity to University

standards in pay scales, health services and pension benefits, and partly by the necessity for responsible accounting practices.

Such expenses represent, of course, a relatively modest feedback from the increasing amounts collected each year for the alumni fund which is a generous response to the Association's own independent solicitation. This does not mean that each alumni association must submit its budget to its respective dean for his approval, nor has any dean confessed to having challenged or wished to challenge his alumni association on its budget.

It is rumored that in some institutions of higher learning the alumni are organized by the administrative offices and are under their control, but at Harvard Medical School the autonomy of the Alumni Association has never been questioned nor is it likely to be, so long as channels of communication between the Dean's office and the Association are kept open at the top level. The University's alumni-elected board of Overseers is in itself a unique guarantee that Harvard is and is likely to remain a democratic institution.

leadership by seeking out promising students who can benefit from an educational experience at the Medical School or School of Dental Medicine." He pointed out that only 2.2 per cent of the nation's physicians are Negroes, and 75 per cent of the 200 Negro medical graduates each year are produced by two schools, Howard and Meharry. "The health problems among the Negro population, together with growing shortages in all categories of health manpower, make training of additional physicians and dentists a matter of the greatest urgency."

Because an education at Harvard Medical School costs \$5,000 each year, an immediate goal of \$75,000 has been set to provide scholarships for the first group of 15 students who may be admitted. As similar numbers of disadvantaged students are added in succeeding years, the need will rise to \$300,000 annually. This support is being sought from the Faculty and Staff and from philanthropic foundations, corporations, and friends of the Medical School.

The gradual and too frequently grudging admission of our colored citizenry to its full recognition, rights and privileges, has been proceeding at a discouragingly slow pace for a century, although with considerable acceleration during the past decade. Walter Hines Page, in his introduction to Booker T. Washington's autobiography, *Up From Slavery*, first published at the turn of the century, referred to the "one continuous great problem that generations of statesmen had wrangled over, and a million men fought about . . . this dark shadow that had oppressed every large-minded statesman from Lincoln to Jefferson" and, one might add, to the present day.

In the growing acceptance of the political principle, however idealized, that all men are created equal and that the equality is now rapidly being admitted, there is a tendency to forget or belittle the early leadership of Booker Washington. For one must remember that all who are granted a clearer view of human progress are standing on the shoulders of the pioneers who preceded them. New leaders come and go, and the shock of Martin Luther King's assassination was needed to stir into more effective action those who believed strongly enough in an eventual emancipation.

Equal Opportunity

On the recommendation of the Faculty, adopted at its meeting on April 29, the Harvard Medical School is undertaking a major program to prepare significant numbers of Negro and other disadvantaged students for careers in medicine and dentistry. "The Fund for Disadvantaged Students" has been established to support the recruiting effort, special remedial work that may be required, and scholarships, some of which will be named in memory of the late Dr. Martin Luther King, Jr.

A committee, under the chairmanship of Dr. David D. Potter, associate professor of neurobiology, has developed plans, in association with

the Admission Committee, to increase the size of each entering class by a minimum of 15, beginning in the academic year 1969-1970. Dr. Potter emphasized that the "Harvard Medical School does not employ quotas in its admission policy and no limit is implied in the present case. There will be active recruiting of not only able people already fully prepared, but also of those whose academic deficiencies will be repaired by courses taken via cross-registration with Harvard College."

Dean Ebert, in a letter to the Faculty supporting the program, affirmed that "Harvard has an obligation to provide

Harvard University—a liberal institution—has as a matter of course made its facilities available to qualified Negro students for many years. Having gone the first mile it is now constrained, in all conscience, to go the second, and many other institutions of learning "have admitted an obligation to compensate for the poorer educational background of some of these students resulting from the structure of our society."

In the case of Harvard Medical School, the matter was introduced at a Faculty meeting on April 26, with the proposal that fifteen scholarships for Negro students be established, some, presumably, in the name of Martin Luther King, as an immediate goal. An essential aspect of the program is that these students should be actively sought out and recruited, the main criteria being their interest in medicine and, as with all students, the intellectual capacity to succeed in the effort, help being given them to remedy their early educational deficiencies. For it is no longer merely a matter of accepting into the School those who are already prepared, but helping to create that preparedness.

Coddling and pampering are superfluous, for the Afro-American will no longer tolerate a patronizing condescension, but he does need equal opportunity and the means, which society has long withheld, of obtaining it.

As stated in the proposal to the Faculty, "Most Negroes are caught up in a vicious cycle. In the case of education they are condemned to inadequate grammar and secondary schools. As a result, they do not attend the better colleges in sufficient numbers and are underrepresented in graduate schools. . . One of our contributions can be to make up for this long period of neglect by seeking out intellectually qualified black college students interested in medical careers and giving them the opportunity that is not open to them now, only because of the way in which our society has educated them."

A resolution embodying the general proposal having been approved, the Dean was directed "to appoint, immediately, a Faculty committee to implement the program." Dr. Goldhaber, dean designate of the School of Dental Medicine, gave assurance that his School will fully participate. On May

9, Dean Ebert accordingly named a 12-member committee to put the resolution into effect.

The most recent step, at the time of this writing, has been the action of the Faculty on May 24, instructing the Dean "to establish a Harvard Medical School commission to investigate the potential contributions of the School to solution of the problems of Boston's black community." The establishment of such a commission was urged on the Faculty in a petition signed by 278 of the 683 students then enrolled in the School, supported by a letter from 11 of the Faculty's most respected members; it was stipulated that the findings and recommendations should be presented to the Faculty for consideration within six months. And so at last the scales are falling from the eyes of Justice.

Nor would it be amiss, in the establishment of such scholarships, to remember the name of William A. Hinton, Harvard B.S. 1905, M.D. 1912, for many years director of the Wasserman Laboratory at the School, deviser of the Hinton test, chief of Clinical Laboratories at the Boston Dispensary special consultant to the United States Public Health Service, a professor at Simmons College and finally appointed, in 1949, clinical professor of bacteriology and immunology at Harvard Medical School.

As stated in an editorial published in the *New England Journal of Medicine* on July 21 of that year, "Dr. Hinton, the friend whom . . . generations of medical students have held in affectionate regard . . . thus becomes the first Negro to hold a professorship in Harvard University."

New Dean - New Approach

On July 1, 1968, Dr. Paul Goldhaber assumed the deanship of the Harvard School of Dental Medicine. In undertaking this important and, at the same time, difficult assignment, Dr. Goldhaber has a clear mandate from the University and from the Faculty of Medicine to chart a more independent educational course for the School of Dental Medicine. The School was organized in 1940 under the wing of the Faculty of Medicine with no provision to develop its own pre-clinical program, apart from the needs of medical education, and with no possibility for growth in accordance with its own needs and progress. The School marshalled an outstanding faculty, attracted top flight dental students, developed a vigorous program in dental research and produced new leadership of the highest order for the profession. Despite these successes, classes of roughly a dozen students each imposed a severe limitation on the school's total impact and on its ability to attract private funds.

The way has been opened for an imaginative new approach to dental education at Harvard but the problems of inadequate funds and physical obsolescence remain and therein lies the greatest challenge that faces the new administration. The contributions that the School of Dental Medicine can make to the medical community and to

the health services are real and deserving of support but continued tolerance by some and good wishes by others will not be enough. The new dean, able, vigorous and devoted as he is, cannot do the job alone. The willingness of all concerned groups to help mobilize the necessary financial and educational resources will be necessary if the School of Dental Medicine is to continue in setting the standards of instruction and scholarship.

The plight of the private dental schools is everywhere the same—impoverishment, deficits and eventual abandonment or take-over by a State University. This country can afford private dental schools in the same way it can afford private education for other health services. However, the attitudes, practices and priorities of the private sector of philanthropy including dental alumni groups will have to change if private dental schools in general, and Harvard's school with an unmatched record of leadership in dental education and research, are to be sustained.

Dr. Goldhaber is admirably qualified to direct this new effort. Under his leadership there is, locally, the welcomed opportunity for the School of Dental Medicine to grow and to expand its contributive role in health education, service and research within the Harvard community.

Promotions and Appointments

EMERITUS PROFESSOR

William B. Castle '21: Francis Weld Peabody Faculty Professor of Medicine
Samuel L. Gargill: clinical professor of medicine
Alexander Marble '27: clinical professor of medicine
Richard Schatzki: associate clinical professor of radiology
Clement A. Smith: professor of pediatrics at Boston Hospital for Women (Lying-in Division)
Maurice M. Tolman '27: clinical professor of dermatology

PROFESSOR

Monroe D. Eaton '30: bacteriology and immunology
Irving H. Goldberg: medicine
Morris J. Karnovsky: pathology
Elvin V. Semrad: psychiatry at Massachusetts Mental Health Center
Richard L. Sidman '53: neuropathology
Arthur K. Solomon: biophysics
Thomas H. Wilson: physiology

ASSOCIATE PROFESSOR

Stanley J. Adelstein '53: radiology at Peter Bent Brigham Hospital
Howard S. Frazier '53: medicine at Beth Israel Hospital
Edgar Haber: medicine at Massachusetts General Hospital
Stephen M. Krane: medicine at MGH
Edward A. Kravitz: neurobiology
Franz von Lichtenberg: pathology at PBBH
John G. Nicholls: physiology
Warren E. C. Wacker: medicine

CLINICAL PROFESSOR

Henry F. Allen '43B: ophthalmology

ASSOCIATE CLINICAL PROFESSOR

William F. Bernhard: surgery
John R. Brooks '43B: surgery
Bradford Cannon '33: surgery
Wallace H. Clark, Jr.: pathology
John F. Crigler, Jr.: pediatrics
Hermes C. Grillo '47: surgery
Lester Grinspoon '55: psychiatry
William H. Harris: orthopedic surgery
Vernon H. Mark: surgery
William W. Montgomery: otolaryngology
Charles L. Schepens: ophthalmology

Peter E. Sifneos '46: psychiatry
H. Richard Tyler: neurology

ASSISTANT PROFESSOR

Alan C. Aisenberg: medicine
Joel J. Alpert '56: pediatrics
Ronald A. Arky: medicine
David T. Armstrong: anatomy
Barry G. W. Arnason: neurology at MGH
Karoly Balogh: pathology at MGH
G. Octo Barnett '56: medicine at MGH
James A. Belli: radiology at the Conjoint Radiation Therapy Center
Daniel S. Bernstein: medicine
Kurt J. Bloch: medicine at MGH
Mario R. Capecchi: biological chemistry
Richard E. Coggeshall '56: anatomy
Joseph M. Corson: pathology at PBBH
Stanley Deutsch: anesthesia
David S. Feingold '58: medicine at Beth Israel Hospital
Ralph S. Goldsmith: medicine
Dennis C. Gould: biological chemistry
Zach W. Hall: physiology
Norman K. Hollenberg: radiology
Charles E. Huggins '52: surgery at MGH
Robert L. Jungas: biological chemistry
Jeremias H. R. Kagi: medicine
Russell H. Kesselman: medicine
David P. Laufer: medicine at PBBH
Ronald A. Malt '55: surgery at MGH
Chaim I. Mayman: neurology at Beth Israel Hospital
Israel Mirsky: mathematical biology in the department of medicine
John C. Norman '54: surgery
David C. Poskanzer '54: neurology at MGH
John T. Potts, Jr.: medicine at MGH
Kurt Randerath: biological chemistry in the department of medicine
Edward S. Reynolds: pathology at PBBH
James F. Riordan: biological chemistry
Stephen H. Robinson '58: medicine
Leon D. Sabath '56: medicine
Stuart F. Schlossman: medicine at Beth Israel Hospital
Geoffrey W. G. Sharp: pharmacology at MGH
Richard I. Shader: psychiatry
Harvey M. Shein '61: psychiatry at McLean Hospital
Philip R. Steinmetz: medicine at Beth Israel Hospital
Edward A. Sweeney: pediatric dentistry at The Children's Hospital
Roe Wells: medicine at PBBH

ASSISTANT CLINICAL PROFESSOR

Richard A. Bloomfield '38: medicine
Robert F. Bradley: medicine
Nancy L. R. Bucher: medicine
Diane W. Crocker: pathology
Roman W. DeSanctis '55: medicine
L. Leon Dogon: operative dentistry
Claes H. Dohlman: ophthalmology
Lawrence D. Egbert: anesthesia
John E. Gary: radiology
Anna-Marie Grøn: orthodontics
Phillips Hallowell '43B: anesthesia
Paul M. Howard: psychiatry
Rita M. Kelley: medicine
Sherwin V. Kevy: pediatrics
Raymond N. Kjellberg: surgery
Laure M. L. Lebret: orthodontics
Martin B. Levene: radiology
William F. Murphy: psychiatry
Chester B. Rosoff '46: surgery
Samuel R. Schuster: surgery
John Shillito, Jr. '52: surgery
Chiu-Chen Wang: radiology
Roy E. Wuthier: biological chemistry in the School of Dental Medicine

ASSOCIATE

Andrew S. Abraham: pathology at PBBH
Frederick W. Ackroyd: surgery
Menelaos A. Aliapoulios: surgery
Kenneth A. Arndt: dermatology at Beth Israel Hospital
Arthur K. Ashbury: neurology at MGH
Bernard M. Babior: medicine
Theodore C. Barton: obstetrics and gynecology
Harry Bass: medicine at PBBH
Howard L. Bleich: medicine at Beth Israel Hospital
Michael A. Bratt: bacteriology and immunology
Mortimer J. Buckley: surgery at MGH
Charles B. Carpenter '58: medicine
Mortimer M. Civan: medicine at MGH
Willard M. Daggett: surgery at MGH
Joseph Eichberg, Jr.: biological chemistry at McLean Hospital
Richard R. Gacek: otolaryngology at Massachusetts Eye and Ear Infirmary
Stephen E. Goldfinger: medicine at MGH
Donald P. Goldstein: obstetrics and gynecology
Carl A. Hirsch: medicine
George A. Jacoby, Jr. '58: medicine at MGH
Aaron Lazare: psychiatry at MGH
David C. Lewis '61: medicine at Beth Israel Hospital
Raphael H. Levey '59: surgery
Paul S. Levy: preventive medicine
Edward Lowenstein: anesthesia at MGH
Jack M. Matloff: surgery
Eldred D. Mundth '59: surgery at MGH
Peter E. Nathan: psychology in the department of psychiatry
Camille B. Olson: pharmacology

Ernest H. Picard '55: neurology at MGH
William H. Plauth, Jr.: pediatrics at The Children's Hospital
Bernard J. Ransil: medicine
Peter Reich '56: psychiatry
Seymour Rosen: pathology at Beth Israel Hospital
Norman P. Rosman: neurology at MGH
Robert J. Scheuplein: biophysics in the department of dermatology
Louis M. Sherwood: medicine in Beth Israel Hospital
John J. Skillman: surgery
Frank E. Speizer: medicine
Neal H. Steigbigel '60: medicine at Beth Israel Hospital
Elizabeth Taber-Pierce: anatomy
Jeremiah G. Tilles '58: medicine
Gordon V. Watters: neurology at The Children's Hospital
Raymond B. Wuerker: anatomy
Robert R. Young '61: neurology
Peter M. Yurchak '57: medicine at MGH

CLINICAL ASSOCIATE

Herbert I. Bader: periodontology
Alan G. Birtch: surgery
A. Arthur Boruchoff: ophthalmology
Robert J. Brockhurst '47: ophthalmology
Jacob Christ: psychiatry
Freddy H. Frankel: psychiatry
Robert M. Goldwyn '56: surgery
Joseph S. Gryboski: medicine
Arthur L. Herbst '59: obstetrics and gynecology
Bernard T. Hutchinson '58: ophthalmology
Hubert Jockin: pathology
Naphtali Joffe: radiology
Irwin K. Kline: pathology
John H. Lamont '46: psychiatry
Sumner D. Liebman '38: ophthalmology
Maria Lorenz: psychiatry
Edward M. Mahoney '50: surgery
Daniel Miller: otolaryngology
Tassadduk H. Moghul: surgery
Alfred P. Morgan, Jr.: surgery
Robert G. Ojemann: surgery
Henry P. Pendergrass: radiology
Alan D. Perlmutter '56: surgery
Charles D. J. Regan '46: ophthalmology
John P. Remensnyder '57: surgery
S. Patric Scavotto: dental medicine
Robert H. Sehapiro: medicine
Norman J. Silverstone '47: medicine
Sydney Shore: otolaryngology
Warren J. Taylor: surgery
Jerome L. Weinberger: psychiatry
Gerald F. Winkler: neurology

LECTURER

Alexander M. Burgess, Jr. '37: preventive medicine
James B. Hartgering: preventive medicine
Elizabeth R. Simons: biological chemistry
Lucy F. Squire: radiology
Robert S. Weiss: sociology in the department of psychiatry



INTERNSHIP LIST 1968

Unless otherwise noted all internships start July 1, 1968 for one year.

Name	Hospital (and location)	Service
Adair, Richard F.	University Hospitals of Cleveland, Cleveland, Ohio	Medicine
Adams, Patricia E. C.	Massachusetts General Hospital, Boston	Pediatrics
Anderson, Einar W.	Los Angeles County Harbor General Hospital, Torrance, California	Medicine
Arradondo, John E. R.	Jewish Hospital of St. Louis, St. Louis, Missouri	Medicine
Ascher, Michael S.	Bellevue Hospital Center, New York, New York	Medicine
Aufranc, St. G. Tucker	University of Colorado Medical Center, Denver, Colorado	Surgery
Benz, Ronald R.	Massachusetts General Hospital, Boston	Pediatrics
Benz, Wendy G. C.	Arrangement pending	
Boerstling, Herbert	Massachusetts General Hospital, Boston	Pediatrics
Borden, Spencer, 4th	Children's Hospital Medical Center, Boston	Pediatrics
Breslow, Jan L.	Children's Hospital Medical Center, Boston	Pediatrics
Brier, Arnold M.	Boston City Hospital (Harvard Service), Boston	Medicine
Brownstein, Carlton S.	Beth Israel Hospital, Boston	Medicine
Bruggeman, Lewis L.	Los Angeles County Harbor General Hospital, Torrance, California	Medicine
Bullock, John D.	Jewish Hospital of St. Louis, St. Louis, Missouri	Medicine
Burdick, James F.	Massachusetts General Hospital, Boston	Surgery
Carpenter, Herschel A.	University of Washington Affiliated Hospitals, Seattle, Washington	Pathology
Cebrik, Michael M.	Jewish Hospital of St. Louis, St. Louis, Missouri	Medicine
Chagnon, Suzanne E.	Children's Hospital Medical Center, Boston	Pediatrics
Chen, Lincoln C.	Massachusetts General Hospital, Boston	Medicine

Chesbro, Bruce W.	Stanford University Affiliated Hospitals, Palo Alto, California	Medicine
Chivian, Eric S.	Mount Zion Hospital and Medical Center, San Francisco, California	Rotating
Cohen, Michael V.	Boston City Hospital (Harvard Service), Boston	Medicine
Colvin, Robert B.	Massachusetts General Hospital, Boston	Surgery
Czaja, Albert J.	Philadelphia General Hospital (University of Pennsylvania Division), Philadelphia, Pennsylvania	Medicine
Dolgoff, Robert K.	Mount Zion Hospital and Medical Center, San Francisco, California	Rotating
Donaldson, Sarah S.	University of Washington Affiliated Hospitals, Seattle, Washington	Medicine
Dow, Lois J. W.	Bronx Municipal Hospital Center, New York, New York	Medicine
Droller, Michael J.	Bronx Municipal Hospital Center, New York, New York	Medicine
Dudley, William E., 2d	Philadelphia General Hospital (University of Pennsylvania Division), Philadelphia, Pennsylvania	Rotating
Ellsworth, George A.	Mary Fletcher Hospital, Burlington, Vermont	Rotating
Ellsworth, Robert M.	U. S. Naval Hospital, Oakland, California	Rotating
Fisher, Morris A.	Cleveland Metropolitan General Hospital, Cleveland, Ohio	Medicine
Frederick, Robert A.	Medical College of Virginia, Richmond, Virginia	Surgery
Funkenstein, Daniel L.	Stanford University Affiliated Hospitals, Palo Alto, California	Medicine
Furlong, Maurice B., Jr.	University of Alabama Medical Center, Birmingham, Alabama	Medicine
Gail, Mitchell H.	Peter Bent Brigham Hospital, Boston	Medicine
Garrison, Henry B.	Yale-New Haven Medical Center, New Haven, Connecticut	Medicine
Goldberg, Deborah L. B.	Cambridge City Hospital, Cambridge	Rotating
Goldberg, George A.	Beth Israel Hospital, Boston	Medicine
Goldberg, Michael E.	Peter Bent Brigham Hospital, Boston	Medicine
Goldenson, Ronald H.	Peter Bent Brigham Hospital, Boston	Medicine
Gradman, Wayne S.	University of California Hospital, Los Angeles, California	Surgery
Grana, William A.	Barnes Hospital Group, St. Louis, Missouri	Surgery
Greenacre, Judith K. F.	Arrangement pending	
Gregory, Garth L.	Los Angeles County General Hospital, Los Angeles, California	Rotating
Guarino, Arthur V.	Massachusetts General Hospital, Boston	Pathology
Guss, Stephen B.	Beth Israel Hospital, Boston	Medicine
Hadler, Norton M.	Massachusetts General Hospital, Boston	Medicine
Harris, David T.	Philadelphia General Hospital (University of Pennsylvania Division), Philadelphia, Pennsylvania	Medicine
Hawk, Alan B.	Palo Alto-Stanford Hospital Center, Palo Alto, California	Pediatrics
Hejinian, John P.	San Francisco General Hospital, San Francisco, California	Rotating
Herman, Judith L.	Mount Auburn Hospital, Cambridge	Rotating
Hight, Donald W.	Peter Bent Brigham Hospital, Boston	Surgery
Hochschuler, Stephen H.	Boston City Hospital (Harvard Service), Boston	Surgery
Holloran, James F., Jr.	Los Angeles County Harbor General Hospital, Torrance, California	Rotating
Hurwitz, Barbara M.	Massachusetts General Hospital, Boston	Pediatrics
Jakobiec, Frederick A.	Stanford University Affiliated Hospitals, Palo Alto, California	Medicine
Kahn, Henry S.	Boston City Hospital (Boston University Service), Boston	Medicine
Kaiser, John S.	Massachusetts General Hospital, Boston	Medicine
Kanaaneh, Hatim A-K.	Harvard School of Public Health	Pathology
Kattwinkel, John	Duke Hospital, Durham, North Carolina	Pediatrics
Kelley, Jonathan M.	Boston City Hospital (Harvard Service), Boston	Surgery
King, Robert A.	Children's Hospital Medical Center, Boston	Pediatrics
Kluft, Richard P.	St. Luke's Hospital Center, New York, New York	Medicine
Kolonel, Laurence N.	Mount Zion Hospital and Medical Center, San Francisco, California	Rotating
Krauss, Ronald M.	Boston City Hospital (Harvard Service), Boston	Medicine
LaCombe, Michael A.	Strong Memorial Hospital, Rochester, New York	Medicine
Levine, David N.	Beth Israel Hospital, Boston	Medicine
Levine, Frederick H.	Massachusetts General Hospital, Boston	Surgery
Levy, David E.	New York-Memorial Hospital, New York, New York	Medicine
Livingston, Jack G.	Los Angeles County General Hospital, Los Angeles, California	Medicine
Lobis, Robert A.	University of Chicago Hospitals and Clinics, Chicago, Illinois	Medicine
Lurie, Melvyn L.	Peter Bent Brigham Hospital, Boston	Surgery
Marks, Richard A.	Roosevelt Hospital, New York, New York	Surgery
Marshall, Robert A.	Jewish Hospital of St. Louis, St. Louis, Missouri	Medicine
McBean, A. Marshall	Boston City Hospital (Harvard Service), Boston	Medicine
McNutt, Edith G. R.	Mount Auburn Hospital, Cambridge	Rotating
Miller, Richard J.	University of California Hospital, Los Angeles, California	Medicine

Morain, William D.	Peter Bent Brigham Hospital, Boston	Surgery
Mosher, Deane F., Jr.	Duke Hospital, Durham, North Carolina	Medicine
Munro, Alan B.	North Carolina Memorial Hospital, Chapel Hill, North Carolina	Medicine
Nafziger, J. Calvin	Buffalo General Hospital-E. J. Meyer Memorial Hospital, Buffalo, New York	Medicine
Oakes, David D.	Peter Bent Brigham Hospital, Boston	Surgery
Oakes, Donna G.	Beth Israel Hospital, Boston	Surgery
Omachi, Rodney S.	Massachusetts General Hospital, Boston	Medicine
Onion, Daniel K.	University of Washington Affiliated Hospitals, Seattle, Washington	Medicine
Oredugba, Olumuyiwa O.	Jewish Hospital of St. Louis, St. Louis, Missouri	Medicine
Orkin, Frederick K.	Jewish Hospital of St. Louis, St. Louis, Missouri	Medicine
Parker, George W.	Jewish Hospital of St. Louis, St. Louis, Missouri	Medicine
Patterson, Laird G.	H. C. Moffitt-University of California Hospitals, San Francisco, California	Medicine
Pauker, Stephen G.	Boston City Hospital (Boston University Service), Boston	Medicine
Pearle, David L.	New York-Memorial Hospital, New York, New York	Medicine
Peppercorn, Mark A.	Beth Israel Hospital, Boston	Medicine
Perkins, David G.	University of Washington Affiliated Hospitals, Seattle, Washington	Rotating
Pincus, Stephanie F. H.	Boston City Hospital (Boston University Service), Boston	Medicine
Pollard, Thomas D.	Massachusetts General Hospital, Boston	Medicine
Posner, Michael K.	University of Chicago Hospitals and Clinics, Chicago, Illinois	Pediatrics
Prager, Kenneth M.	Presbyterian Hospital, New York, New York	Medicine
Reale, Vincent F.	Johns Hopkins Hospital, Baltimore, Maryland	Surgery
Reed, William P., Jr.	Palo Alto-Stanford Hospital Center, Palo Alto, California	Surgery
Reilly, Frank E.	Los Angeles County Harbor General Hospital, Torrance, California	Medicine
Reising, Paul A., Jr.	University of Washington Affiliated Hospitals, Seattle, Washington	Rotating
Rieder, Ronald O.	Johns Hopkins Hospital, Baltimore, Maryland	Pediatrics
Rini, James M.	University of Minnesota Hospitals, Minneapolis, Minnesota	Surgery
Robertson, H. Thomas	King County Hospital, Seattle, Washington	Rotating
Rosenberg, Gary L.	Beth Israel Hospital, Boston	Medicine
Rutherford, R. Carver	U. S. Public Health Service Hospital	Medicine
Sachs, David H.	Massachusetts General Hospital, Boston	Surgery
Salisbury, Kent W.	Massachusetts General Hospital, Boston	Medicine
Schneider, Bruce S.	Mount Sinai Hospital, New York, New York	Medicine
Seward, Paul N.	H. C. Moffitt-University of California Hospitals, San Francisco, California	Pediatrics
Shapiro, Edward R.	Beth Israel Hospital, Boston	Medicine
Sherman, Stephen A.	San Francisco General Hospital, San Francisco, California	Rotating
Sloane, Robert W., Jr.	Massachusetts General Hospital, Boston	Surgery
Soper, Michael R.	Massachusetts General Hospital, Boston	Medicine
Sos, Thomas A. G.	Montefiore Hospital and Medical Center, New York, New York	Rotating
Southmayd, William W.	Massachusetts General Hospital, Boston	Surgery
Starr, Stuart E.	Presbyterian Hospital, New York, New York	Pediatrics
Steinman, Ralph M.	Massachusetts General Hospital, Boston	Medicine
Sun, Edward R.	University of Colorado Medical Center, Denver, Colorado	Medicine
Tegtmeier, Ronald E.	University of Colorado Medical Center, Denver, Colorado	Surgery
Templeton, John M., Jr.	Medical College of Virginia, Richmond, Virginia	Surgery
Tolkoff, Nina E.	Massachusetts General Hospital, Boston	Medicine
Trobe, Jonathan D.	Presbyterian-St. Luke's Hospital, Chicago, Illinois	Medicine
Trowbridge, Frederick L.	Massachusetts General Hospital, Boston	Pediatrics
Vaughan, M. Clay	Peter Bent Brigham Hospital, Boston	Surgery
Vore, Jon M. B.	New England Medical Center Hospitals, Boston	Pediatrics
Ward, Samuel P.	Barnes Hospital Group, St. Louis, Missouri	Pathology
Weil, Andrew T.	Mount Zion Hospital and Medical Center, San Francisco, California	Rotating
Welch, John P.	Massachusetts General Hospital, Boston	Surgery
Wilson, Samuel H., Jr.	National Institutes of Health	Research
Wittes, Robert E.	Beth Israel Hospital, Boston	Medicine
Wolf, Gerald L.	University of Nebraska Hospital, Omaha, Nebraska	Medicine
Yanowitz, Ira S.	University Hospitals of Cleveland, Cleveland, Ohio	Medicine
Youngerman, Joseph K.	Strong Memorial Hospital, Rochester, New York	Pediatrics
Zaia, John A.	St. Louis Children's Hospital, St. Louis, Missouri	Pediatrics
Zawadsky, Peter M.	North Carolina Memorial Hospital, Chapel Hill, North Carolina	Rotating

ALONG THE PERIMETER

Dental School Deanship to Paul Goldhaber

The Harvard School of Dental Medicine opened its second century on July 1, 1968 with a new Dean, Paul Goldhaber, D.D.S., Professor of Periodontology and Director of Postdoctoral Studies at the School.

Dr. Goldhaber's appointment was announced by President Nathan M. Pusey last April. This followed by four months the convening of an expert committee charged, by Mr. Pusey, with the exploration of the current and future role of the School of Dental Medicine.

On December 7, 1967, the committee recommended that the University continue its program of dental education with certain changes designed to better reflect the specialized needs of the student as a future practicing dentist who must be an integral member of the health team.

The search for a new dean was initiated by Mr. Pusey in July, 1967, following the resignation of Dr. Roy O. Greep who became John Rock Professor of Population Studies, Harvard School of Public Health, and Director of the Laboratory of Human Reproduction and Reproductive Biology, Harvard Medical School. For a year, J. Howard Oaks, D.M.D. '56, was Acting Dean, and under his leadership implementation of the programs recommended by Mr. Pusey's expert committee has been actively pursued.

Dr. Goldhaber—the Dental School's ninth dean—is a distinguished teacher, clinician and investigator in periodontology and experimental pathology. "Under his leadership," said Dean Robert H. Ebert, "once again Harvard has the opportunity to innovate in the field of dental education."

Dr. Goldhaber's association with HSDM began in 1954 with an appointment as research fellow in dental medicine. He progressed through the academic ranks to become research associate in oral pathology in 1955; associate in oral pathology in 1956; assistant professor of oral pathology in 1959; associate professor of periodontology and director of postdoctoral studies in 1962; and professor of periodontology in 1966.

Last April, before assuming his role of Dean, Dr. Goldhaber had this to say:

"The Harvard School of Dental Medicine plans to take the lead in developing a new, model dental curriculum that will better enable the future dental graduate to meet the demands of society as an integral member of the health team. Among the curricular changes anticipated are the development of a concentrated basic science core and a basic clinical dentistry core. The relevance of the basic sciences to oral biology and clinical dentistry will be stressed in the correlating oral biology and pathophysiology core. Other unique features of the program will include increased experience in clinical medicine, a rotating dental externship within a hospital, and elective time to pursue specific clinical and non-clinical areas. The traditional 'lockstep' pattern of dental education will be replaced by greater opportunities for the individual student to follow his dental degree."

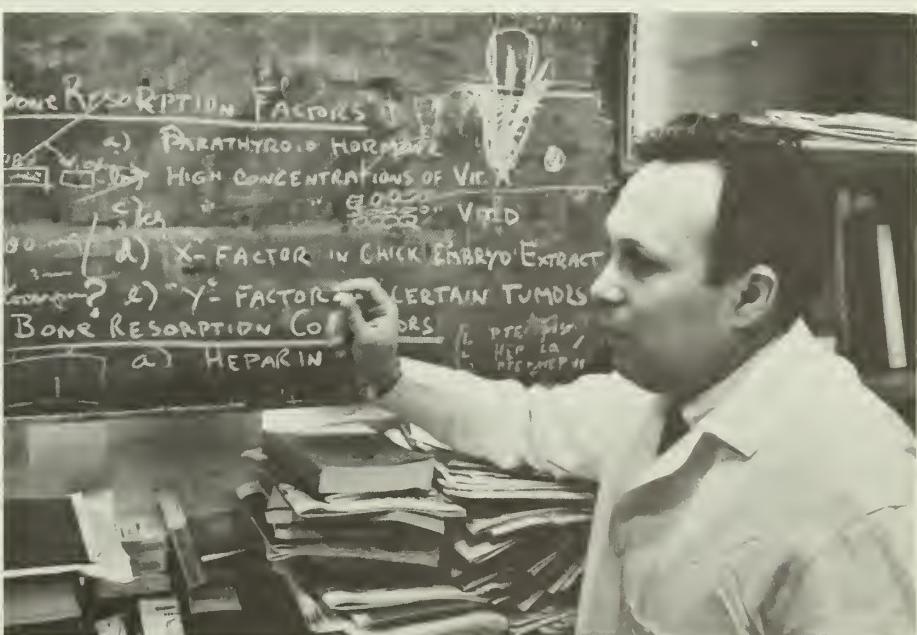
Dr. Goldhaber stressed that such an educational and research program will depend upon the acquisition by the school of significant financial support from private sources since Federal matching funds are readily available for imaginative programs.

Dr. Goldhaber is internationally recognized for his studies on bone

destruction and formation. His major clinical concern is the study and treatment of the supporting tissues surrounding the teeth. Through these studies he has established that high oxygen concentrations are necessary to the process. He developed a laboratory procedure which is now used to determine the effect of various physiological agents and drugs on bone remodeling in tissue culture systems.

Dr. Goldhaber was born in New York City. He received the D.D.S. degree in 1948 from the New York University College of Dentistry and the B.S. degree in 1954 from City College of New York. While still a dental student at NYU, Dr. Goldhaber undertook basic research studies in the field of tissue culture at the Sloan Kettering Institute for Cancer Research. As a result of this work he was asked to start a tissue culture laboratory for the Department of Ophthalmology at the Harvard Medical School and from 1948 to 1950 he was an assistant in ophthalmic research at HMS.

He returned to New York in 1950 to complete his postdoctoral studies in periodontics at Columbia University School of Dental and Oral Surgery. His studies there were interrupted for a year (1952-1953) when he served in the U.S. Army Dental Corps at Camp Chaffee, Ark.



HMAA Elections

During the Alumni Association's Annual Business Meeting (held at noon on May 31), the following officers were elected: Oliver Cope '28, president (1968-1969); James M. Faulkner '24, president-elect; and Bradford Cannon '33, vice-president.

As a result of the balloting the following were elected to the Council for a three-year term: Edwin F. Cave '24, James A. Campbell '43B, and Henry F. Allen '43A. The retiring councilors are: Leonard W. Cronkhite '50, Lamar Soutter '35, and Isaac M. Taylor '45. Retiring officers are: Henry H. Faxon '25 from the vice-presidency, and Thomas B. Quigley '33 as representative to the Associated Harvard Alumni Board of Directors. Dr. Cronkhite has been appointed to replace Dr. Quigley.

During the business meeting, announcement was made that the Alumni Association's Prize was given to A.

Joint Professorship of Legal Medicine

William J. Curran has been named the Frances Glessner Lee Professor of Legal Medicine in the Faculty of Public Health and the Faculty of Medicine at Harvard.

It was recently decided that the interrelation of medicine and law at Harvard should encompass far more than forensic pathology. Such issues as population control, tissue and organ transplantation, environmental controls of air, water and space, changing legal concepts of confidentiality in medicine, testing, utilization and availability of artificial human organs, and changing concepts pertaining to death, are all properly the domain of the legal medicine scholar.

Professor Curran is just such a scholar. In 1950 he received the LL.B. degree from Boston College Law School, a year later, the LL.M. degree from Harvard Law School, and in 1958 the S.M. Hygiene degree from the Harvard School of Public Health.

He is the former dean-director of Metrocenter and Metropolitan College at Boston University, and founder of the Law-Medicine Institute at that University. He was responsible for an extensive educational program involving over 5,000 students in more than 500 courses, institutes and other short-term graduate, undergraduate and continuing education programs.

In 1962 he received a Ford Founda-

Marshall McBean '68, permanent class president, at the Internship Day Dinner, March 11; and several amendments to the Alumni Association's Constitution were adopted (see editorial, page 56).

Fun's Fun

Jesse L. Carr '27 had fun in medical school. And he would like today's students, who tend to be somewhat bludgeoned, to have the same opportunity.

To this end he has established, in honor of his late, first wife, the Louise B. Carr Avocational Award. The Award is to be given annually to a member of the third year class who has contributed most to the entertainment and diversion of the class as a whole. The recipient of the prize will be chosen by the Associate Dean of Student Affairs.

Dr. Carr is chairman of the department of legal medicine at the University of California, San Francisco Medical Center.

of Legal Medicine

tion International Law Faculty Fellowship for independent research in Great Britain concerning the legal, legislative, administrative and economic aspects of the British National Health Service.

Last fall, Professor Curran was appointed Visiting Professor of Health Law in the Faculties of Public Health and Medicine at Harvard. Since that time he has made almost unbelievable progress. He is responsible for drafting the recent law in Massachusetts to facilitate organ and full-body donations. Currently he is working with the transplant teams at the Harvard hospitals and with the Anatomy Department on the implementation of this law and the development of new legal procedures and written forms.

He has formed a Legal Studies Committee under the Heart Disease, Cancer and Stroke Program to eliminate legal obstacles to cooperative programs, such as the Medical Examiner and Vital Statistics Programs and Retirement and Workman's Compensation laws. The Surgeon General has named him a member of the Public Health Service Advisory Council on Comprehensive Health Planning for New England.

The Professorship honors Mrs. Frances Glessner Lee who was deeply interested in crime detection. As a teaching aid, she devised a series of world-famous three-dimensional scale models of dramatic crimes.

First Gaiser Professor

Henry I. Kohn '41 is the first David Wesley Gaiser Professor of Radiation Biology at Harvard Medical School. Presently, Dr. Kohn is the Alvan T. and Viola D. Fuller-American Cancer Society Professor of Radiology. He relinquished that Chair on July 1. He will continue as Director of the Shields Warren Radiation Laboratory.

Dr. Kohn's major research concerns the effect of whole-body radiation in both man and animals, the problems of aging as related to radiation, and the mechanisms of action of radio-protective drugs.

In addition to his academic responsibilities, he has served as secretary of the Advisory Committee on Biology and Medicine of the U.S. Atomic Energy Commission, and as an Advisor to the U.S. Delegation of the United Nations Scientific Committee on the Effects of Atomic Radiation.

The Gaiser Chair was established by the University in 1965 through a gift from Mrs. David W. Gaiser of Spokane and her children, Mrs. Frederick Jewett, Jr., and Mrs. William H. Greer, Jr. It honors David W. Gaiser '31.

Professor Rashi Fein

Rashi Fein has been appointed professor of the economics of medicine.

Professor Fein received the B.A. degree in 1948 and the Ph.D. degree in 1956 from Johns Hopkins University.

Since 1963 he has been a member of the senior staff, economic studies division at The Brookings Institution in Washington, D.C. In addition to this position he is a member of the following: Executive Reserve, U.S. Department of Commerce; Academic Council, American Friends of the Hebrew University; National Manpower Policy Task Force; Small Grants Panel, U.S. Department of Labor; Advisory Council to the Hospital Research and Educational Trust; Citizens Board of Inquiry into Hunger and Malnutrition in the United States, National Board on Medicine, National Academy of Sciences; and the Task Force on Occupational Training in Industry, U.S. Department of Labor.

Prof. Fein is a consultant to the Council of Economic Advisors and the U.S. Bureau of the Budget.

First Ingraham Professor of Neurosurgery

Donald D. Matson '39 is the first incumbent of the Ingraham Professorship of Neurosurgery. Simultaneously he becomes chief of neurosurgery at the Children's Hospital Medical Center.

The Professorship was established as a result of an anonymous gift to honor Dr. Franc D. Ingraham, a pioneer in the development of pediatric neurosurgery, neurosurgeon-in-chief at Children's, neurosurgeon to the Peter Bent Brigham Hospital, and associate professor of surgery at HMS.

Dr. Matson is Dr. Ingraham's most distinguished pupil and long-term colleague. Dr. Matson has carried forward the discipline of neurosurgery, particularly the surgery of neurological disorders of childhood, and has earned a position of recognized preeminence in this field.

His research has been concerned with two major areas; experimental production and alleviation of hydrocephalus, and the use of plastic materials within the body. The base which his experimental hydrocephalus studies established provided the background for the first successful modern "shunting" operations, first from the lumbar subarachnoid space into the ureter in communicating hydrocephalus, and then from the lateral ventricles in the ureter in obstructive hydrocephalus.

He was the first surgeon to record the use of ACTH and corticosteroids in facilitating operations for tumors in

and about the pituitary, especially craniopharyngioma. The use of corticosteroids and his refinements of surgical techniques, now make it possible to completely remove craniopharyngioma with the potential of complete cure.



Dr. Matson

Dr. Matson is neurosurgeon at the Peter Bent Brigham Hospital. He is a member of the editorial board of the *Journal of Neurosurgery* and co-author, with Dr. Ingraham, of the standard textbook, *Neurosurgery of Infancy and Childhood*.

Minot Professor of Medicine

James H. Jandl '49 has been appointed George Richards Minot Professor of Medicine and head of Harvard's Department of Medicine at Boston City Hospital. He will also be director of the Second and Fourth (Harvard) Medical Services, and director of the Thorndike Memorial Laboratory.

Dr. Jandl's varied and original contributions to hematology, and to the understanding of the red cell in particular, have given him national and international renown. Among his more important research endeavors in the past have been the mechanisms by which abnormalities of red cells, plasma or reticuloendothelial tissue condition increased hemolysis in vivo,

studies on "Heinz body" formation in the intact red cells of patients with certain hemolytic anemias, studies on the mechanisms of lysis in congenital spherocytosis, and classical studies on the selective movement of iron from plasma transferrin to immature red cells.

He is consulting editor to *Medicine* and associate editor of *BLOOD, The Journal of Hematology*. He is section chief in hematology for the American Society for Clinical Investigation and the American Federation for Clinical Research, a member of the American Society of Hematology, American Clinical and Climatological Association, Association of American Physicians.

Andrus Professor

M. Judah Folkman '57 has been named the first Julia Dyckman Andrus Professor of Pediatric Surgery in the Faculty of Medicine at Harvard. Simultaneously, he was named chief of the general surgical services, and head of Harvard's department of surgery at the Children's Hospital Medical Center. Currently, Dr. Folkman is on leave of absence from his administrative duties at the Hospital.

A brilliant young investigator, Dr. Folkman has been cited as "exemplifying to the highest degree the qualities of a surgeon, a teacher and a scientist." He developed an isolated organ perfusion system which makes possible long term studies of the growth rate and metabolism of human solid tumors and leukemia. In 1966, he discovered that anesthesia gases and vapors could be introduced intravenously through fine tubes of silicone rubber.

Dr. Folkman is a diplomate of the American Board of Surgery and a member of the Society of University Surgeons, the New York Academy of Science, and Alpha Omega Alpha.

The Julia Dyckman Andrus Chair in Pediatric Surgery was established in August, 1967, with a gift of \$600,000 from the Surdna Foundation, Inc. of New York. The Professorship honors the memory of the wife of the late John E. Andrus.

Funds for the Chair were part of a \$1 million gift to the University by the Foundation in June, 1967. This fifth major gift to Harvard included \$400,000 which was added to the John E. Andrus Teaching and Research Fund. The latter is a separate endowment fund currently used to support Harvard Faculty of Medicine members working in both the basic medical science and clinical departments.

Chief of Surgery Resigns

Paul S. Russell has resigned as chief of surgery at the Massachusetts General Hospital. He will, however, continue to conduct research in transplantation at the Hospital, and continues as John Homans Professor of Surgery at the Harvard Medical School.

Oliver Cope '28, is acting director of the department of surgery at the Hospital.

HMS Associate Professors

BACTERIOLOGY AND IMMUNOLOGY

Monroe D. Eaton '30 has been promoted to professor of bacteriology and immunology at HMS. Since 1947 he has been associate professor.

His scientific career has three distinct periods. His first substantial work was on the purification of diphtheria toxin. His second was an investigation of the antigenicity of malaria parasitis with a view to developing a vaccine. The third period began in 1939 when he was director of the Virus Laboratory for the State of California. During this period of his developing interest in respiratory viruses, he, Meicklejohn and van Herick isolated an agent from cases of atypical pneumonia, the importance of which has just recently become clarified.

The susceptibility of the agent to tetracyclines had long made Dr. Eaton suspicious that it was not in fact a virus. This was finally proven when Chanock and his colleagues were able to grow it in the absence of cells. It is a small microbial form without a rigid cell wall, a genus now named *Mycoplasma*. The Eaton agent is named *Mycoplasma pneumoniae* and is the only member of the genus currently known to produce disease in man. The disease causes 10 per cent of the disability of newly recruited marines, and is responsible for frequent epidemics of pneumonia in schools, hospitals and other institutions.

Dr. Eaton is a fellow of the American Association for the Advancement of Science; and a member of the Society of American Bacteriologists, Society for Experimental Biology and Medicine.

BIOLOGICAL CHEMISTRY

Arthur K. Solomon, Ph.D. has been promoted to professor of biophysics. Since 1957 he has been associate professor.

Dr. Solomon's research has been on ion transport and osmotic flow across biological membranes. He and his students have provided the quantitative foundations for modern permeability studies on the red cell. Their values for osmotic flow coefficient, passive permeabilities to ions and small lipid insoluble molecules, and rates of active transport of ions have been cited as

standards by innumerable investigators all over the world.

Dr. Solomon has also made significant contributions to gastrointestinal and renal physiology. He showed that absorption of fluids from the intestine is coupled quantitatively to simultaneous active transport of sodium.

Since 1959, Dr. Solomon has been chairman of the committee on higher degrees in biophysics at Harvard. He received the Ph.D. degree from Harvard in 1937, the D.Phil. degree in 1947 and the Sc.D. degree in 1964 from Cambridge University. He is a fellow of the American Academy of Arts and Sciences and the American Physical Society; and a member of the Biophysical Society, American Chemical Society, Radiation Research Society.

MEDICINE

Irving H. Goldberg, M.D. has been promoted to professor of medicine. Since 1964 he has been professor and head of the endocrine unit at Beth Israel Hospital.

His research has involved three major areas: the molecular mechanism of action of antibiotics affecting nucleic acid and protein synthesis; the biosynthesis of nucleic acid polymers containing base analogues; and the biosynthesis of thyroglobulin.

Dr. Goldberg is a fine teacher and clinician as well as an outstanding scientist. His bedside rounds and his didactic teaching of house staff and medical students at Beth Israel Hospital present excellent examples of how a warm, compassionate and knowledgeable physician brings a sophisticated understanding of disease mechanisms to the problems of the patient.

He received the M.D. degree from Yale University in 1953 and the Ph.D. degree from The Rockefeller Institute in 1960. Dr. Goldberg is a member of The Endocrine Society, American Society of Biological Chemists, American Society for Clinical Investigation.

NEUROLOGY

Richard L. Sidman '53 has been promoted to professor of neuropathology. Since 1962 he has been assistant professor.

Dr. Sidman's research contributions include studies of regeneration of amphibian limbs, advances in retinal histochemistry, studies on fat and lipid metabolism, studies on histogenesis of CNS, including cerebellum, cerebrum, retina and thalamus, work on retinal dystrophies, and anatomical studies on CNS mutants in mice.

In addition to his research, Dr. Sidman is working on several large works including volume I of his revolutionary programmed text in neuroanatomy written with his brother, Murray Sidman, Ph.D.; a text on neuropathology written with Raymond D. Adams, M.D.; a large chapter on developmental neuroanatomy for Adams and Haymaker's book; and an atlas of the mouse brain.

He is a diplomate of the National Board of Medical Examiners, a fellow of the New York Academy of Sciences, and a member of the Tissue Culture Association, Histochemical Society, American Association for the Advancement of Science, Society for the study of Development and Growth, American Society for Cell Biology.

PATHOLOGY

Morris J. Karnovsky, M.B., B.Ch. has been promoted to professor of pathology. Since 1965 he has been associate professor.

Dr. Karnovsky's investigations indicate a mastery of histochemistry, biochemistry and electron microscopy in the framework of cellular physiology and pathology. His studies on capillary permeability, the blood-brain barrier and renal filtration are outstanding among recent efforts to correlate structure and function at the electron microscope level. His technique is widely used for examination of a great variety of problems involving phagocytosis, pinocytosis, and transepithelial transport.

A second area of his research is the study of cell-to-cell contacts. With Dr. Jean Revel he developed colloidal lanthanum as an electron opaque tracer that fills the extracellular space, permeating and clearly delineating the smallest recesses.

Dr. Karnovsky is a member of the Histochemical Society, American Society for Experimental Pathology, International Academy of Pathology and the American Society for Cell Biology.

PHYSIOLOGY

Thomas H. Wilson, M.D. has been promoted to professor of physiology. Since 1961 he has been associate professor.

Dr. Wilson's research has been concerned with gastrointestinal transport and he has made fundamental contributions to the relation between chemical structure and active transport of hexoses, the mechanism of absorption of macromolecules with particular reference to vitamin B₁₂, embryological development of various specific transport systems of the gut, and genetic and biochemical organization of galactose transport in bacterial cells.

He received the M.D. degree from the University of Pennsylvania in 1948 and the Ph.D. degree from Sheffield University in 1953. Dr. Wilson is a member of the American Society of Biological Chemists, the American Physiological Society and the Editorial Committee of the American Physiological Society's Handbooks on Alimentary Canal.

PSYCHIATRY

Elvin V. Semrad, M.D. has been promoted to professor of psychiatry at the Massachusetts Mental Health Center. Since 1959 he has been clinical professor of psychiatry.

Dr. Semrad has long recognized the importance of psychological and social factors in the understanding of the psychoneuroses and psychoses. His very first paper was devoted to documenting and stressing the frequency with which disturbed emotions are manifested in physical symptoms and how often these are diagnosed and mistreated as bodily diseases. He was one of the first to experiment with the use of group psychotherapy for severe mental illness. He carried this imaginative step further and applied the same group therapy techniques to his residents and students so that they might learn at first hand how they worked. This pioneering teaching procedure is now an accepted part of many major residency training programs.

Dr. Semrad is a gifted teacher and he supervises the residency training program at the MMHC.

He received the M.D. degree in 1934 from the University of Nebraska. He is a fellow of the American Psychiatric Association and the American Psychoanalytic Association.



New Children's Complex

The local saying "if you don't like the New England weather wait a minute" could be paraphrased to, "if you don't like Boston's skyline wait a minute." Changes are evident everywhere. In March, the first part of the new Children's Hospital Medical Center complex was opened. It occupies half a city block and is bounded by Brookline and Longwood Avenues. This architecturally attractive complex includes an 82-room hotel, known as the Children's Inn; a (much needed in this area) restaurant, seating 254 people; a 58-bedroom dormitory for interns and residents at Childrens; and several commercial facilities—a branch of the State Street Bank and Trust Company, the Harvard Coop and Medical Center Surgical Supply and Pharmacy. Towering over all, and just opened, is the 154-unit, 25-story apartment building to house Children's staff and employees.

The entire residential complex was financed through a commercial mortgage and is self-liquidating, but in addition to providing services to the area, the commercial establishments in the complex help to pay its cost.

Leonard W. Cronkhite, Jr. '50, general director of the Children's Hospital said, "We believe the complex will help us reduce hospital costs for the parents of our patients, and will give us greater utilization of hospital beds." The key to the complex, Dr. Cronkhite said, is the Children's Inn, which is at present open to the general public, but

in a few years it is hoped it will be largely used to house certain of the hospital's patients.

"Many of our patients do not need intensive nursing care during the entire course of their hospitalization," said Dr. Cronkhite, "but are not well enough to be sent home if they live outside the Boston area." The parents of such patients inevitably accompany their children to Boston and stay in a hotel. "Now they will be able to stay right on the hospital grounds at the Children's Inn and when the child is well enough he can stay at the Inn with his parents."

For many children, this will shorten their length of stay in the main hospital, and this, in turn, will lessen the cost of hospitalization. Dr. Cronkhite also predicted that once this is shown to be true, those companies underwriting hospitalization insurance will include the cost of such accommodations in their coverage.

The Inn, like the restaurant, is managed for Children's by Marriott Corporation. It is air-conditioned, there is also valet, laundry and room service provided, and free parking for guests. Rates for single rooms are \$12 to \$14 a day, and for double rooms, \$16 to \$18.

Although the new facilities in the complex are primarily of greatest value to the patients, parents and Children's Hospital itself, the whole community, and particularly the working community in this busy medical area, has also greatly benefitted from them.

Rediscovered

The Manhattan Project, now twenty-three years in our past, was undoubtedly the greatest Pandora's Box ever unlocked by man; and Albert Einstein, for all his unworldliness, was probably the only man living at that time who clearly perceived the enormity and awesomeness of unleashing so many scientific possibilities. During the last few years of his life, Einstein indicated, to almost anyone who would listen to him, his overwhelming sense of personal responsibility for the atomic bomb, and pleaded that it never be used in war again. That gentle genius would have approved of much of the intervening years of research presaged by work on the bomb, and he might have been interested to learn that one day someone would discover that fluorocarbon could become a substitute for red blood cell function.

Dr. Robert Geyer, associate professor of nutrition, Harvard School of Public Health, made this startling disclosure last April at the 52nd Annual Meeting of the Federation of American Societies for Experimental Biology. He described the use of emulsified fluorocarbons as being highly effective in transporting oxygen and carbon dioxide through the vessels of living creatures from which the red blood cells have been removed, and are capable of maintaining life.

Dr. Geyer said he believed the work of himself and his associates* marked the first intravenous use of emulsified fluorocarbons in living animals, in this case the white rat. Dr. Geyer pointed out that there were several prior reports describing the use of fluorocarbons with animals and tissue. He noted in particular the "liquid breathing" experiments with mice which have shown that they could survive for short periods of time submerged in fluorocarbon. However, he said, "in the latter the animals' red cells were intact and capable of transporting oxygen and carbon dioxide between lungs and tissues." Other research has involved organs perfused with fluorocarbons, but success of these has been

limited due to lack of a stable emulsion.

In an unemulsified state the particle size of fluorocarbon was found to be too large to freely pass through the capillaries.

The fluorocarbon-rat serum emulsion used in Dr. Geyer's research work is prepared by high pressure homogenization and ultrasonation, and contains several high molecular weight emulsifiers. The particle size achieved is less than one micron in diameter.

Dr. Geyer explained that in his experiments, blood was removed through the exterior jugular vein of the rat while the emulsified fluorocarbon in rat serum was infused through a tail vein. During the procedure the rats breathed a mixture of 90 per cent oxygen. The infused fluorocarbon also was exposed to oxygen prior to entering the tail vein. The total amount of fluorocarbon-serum mixture was approximately 30 milliliters. The rat, however, ended up with a normal volume of approximately 3 cc.

The first stage of the experiment involved daily injections of the fluorocarbon emulsion into rats having all of their normal blood supply. "We established that the rat did tolerate the emulsion," said Dr. Geyer.

In the second stage, 80 per cent of the rat red cells were replaced with fluorocarbon emulsion. "These rats not only survived," he said, "but quickly regenerated a normal number of red cells."

The final stage, replacement of all red cells with the fluorocarbon emulsion, provided a survival time of five hours. "The cause of death in these rats is unknown," said Dr. Geyer. At autopsy "all tissues were found to have normal respiratory rates as indicated by their oxygen uptake," and there was no tissue swelling due to abnormal edema. The rats died peacefully.

Recently, Dr. Geyer and his associates have replaced in rats the total blood supply with emulsified fluorocarbon. The survival period was longer (eight hours) than for those rats in which only the red cells were replaced.

Dr. Geyer and his colleagues have also used the fluorocarbon emulsion as a substitute for blood in the isolated dog heart-lung system. "Performance of the heart during this period was at

least as good using the emulsion as with blood. This substantiates opinions expressed by other investigators," he said, "that the fluorocarbon emulsion may have applications in organ perfusion and preservation work."

The use of free hemoglobin in organ perfusions outside the body, has had its limitations and can cause serious problems when given to animals. "High pressure oxygen has been employed to increase the amount of oxygen dissolved in the water of the blood," Dr. Geyer said, "but expensive equipment is required and there is always some element of danger when working with oxygen under pressure."

It is intriguing now to speculate on the future biological uses for fluorocarbons. They are chemically related to hydrocarbons; they have been used in many manufacturing processes—such as a coating on frypans to prevent eggs sticking—but as a byproduct they were mainly discarded as being useless, and once, long ago, they were used in the production of the atomic bomb.

Lederle Award

Anthony P. Monaco '56 has received a Lederle Medical Faculty Award. The Award, "to assist able men and women who aspire to full-time academic careers," is designed to accelerate the progress of recipients as responsible members of their School's faculty. Part of the Lederle Division of the American Cyanamid Company, it will provide salary support for Dr. Monaco for three years (\$10,000 annually).

Dr. Monaco is assistant professor of surgery at HMS and associate visiting surgeon and director of transplantation research in Harvard's Sears Surgical Laboratory at the Boston City Hospital. He has made significant contributions both to the understanding and the amelioration of the tissue rejection process by demonstrating that it is possible to blunt the rejection reaction associated with transplants involving tissue or organs from non-related individuals. By combining the removal of the thymus gland with injections of small amounts of an immunosuppressive agent, the mechanism which triggers the rejection reaction is suppressed and the tolerance time span time in animals is significantly increased.

*Dr. Robert C. Monroe, assistant professor of pediatrics, Children's Hospital Medical Center, and Mr. Kenneth Taylor, a technician in Dr. Geyer's laboratory.

Community Health Fellows

Gordon T. Moore '63 and Anthony W. Robbins have been appointed Fellows of the Center for Community Health and Medical Care at Harvard.

The Center was recently established under the joint administration of the Faculty of Medicine and the Faculty of Public Health as a University-wide program to develop plans for the optimal delivery of medical care to rural, suburban and urban residents of the U.S.

Currently, Dr. Moore is studying tropical infectious diseases in Bahia, Brazil. During the remaining period of his appointment, he will study under Morton Swartz '47, associate professor of medicine at HMS, and head of the division of infectious disease at the Massachusetts General Hospital.

Great! Masters

During the first five busy days of April, Boston had in it nearly as many physicians as patients. Some 5,000 physicians attended the 49th Annual Session of The American College of Physicians. The Prudential Center—heart of the new high-rising Boston—was the scene for this year's session which was held in association with The Royal College of Physicians of London, to commemorate their 450th anniversary.

Among the many honors bestowed by the American College were 13 new Masterships, which makes the total an exclusive 41 among the 14,000 members of the College. Four alumni and one faculty member received this honor: Herman L. Blumgart '21, Professor of Medicine, Emeritus; Maxwell Finland '26, George Richards Minot Professor of Medicine, Emeritus; John R. Graham '34, lecturer in medicine; Wesley W. Spink '32, Regents Professor of Medicine, University of Minnesota; and George W. Thorn, Hersey Professor of the Theory and Practice of Physic, Samuel A. Levine Professor of Medicine and Head of the Department of Medicine at the Peter Bent Brigham Hospital.

Since a Mastership is granted for "personal character, position of honor and influence, eminence in practice and medical research," the *Bulletin* would like to congratulate all who received it.

Dr. Moore served his internship and residency in internal medicine at the MGH, and then spent a year as Epidemic Intelligence Service Officer in the Epidemiology Branch of the USPHS Communicable Disease Center.

Dr. Robbins received the M.D. degree in 1966 from Yale after which he was an intern and junior assistant resident at Boston's Beth Israel Hospital.

He will work at the John F. Kennedy School of Government with Professor John T. Dunlop, David E. Wells Professor of Political Economy, member of the Institute of Politics and member of the Faculty of the Graduate School of Public Administration.

Dr. Robbins is a teaching fellow in medicine at HMS.

Moseley Fellow

David O. Carpenter '64 has been awarded a William O. Moseley Traveling Fellowship for 1968-1969.

Dr. Carpenter will spend a year in the laboratory of Professor Richard D. Keynes at the Agricultural Research Council, Institute of Animal Physiology, Babraham, Cambridge, England, where he hopes to gain added sophistication and experience in the study of the biophysical properties of nerve and muscle membranes.

After graduation he spent a year as research fellow in the department of physiology at HMS. Since 1965 he has been at the Laboratory of Neurophysiology at the National Institute of Mental Health as a staff associate. Dr. Carpenter is a member of the American Physiological Society.

Developments in Continuing Education

Stephen E. Goldfinger, M.D. has been appointed director of community programs in the department of continuing education at HMS.

As such he will be responsible for developing community hospital educational programs which will enable the School to respond to community requests and to cooperate in the regional

medical programs.

Dr. Goldfinger is instructor in medicine. He received the M.D. degree in 1960 from Columbia University College of Physicians and Surgeons. He is a member of Phi Beta Kappa, Alpha Omega Alpha, and is a diplomate of the American Board of Internal Medicine.

Markle Scholar

Edwin W. Salzman is one of 25 young medical scientists to be named a Markle Scholar in Medical Science by the John and Mary R. Markle Foundation of New York. The Foundation will pay Harvard Medical School \$30,000 (\$6,000 annually for five years) to supplement salary, aid research, and otherwise assist in the development of Dr. Salzman as a teacher and investigator.

Dr. Salzman is assistant professor of surgery at HMS and associate director of the surgical service at Beth Israel Hospital. His major clinical interest is in the field of vascular surgery. He has been concerned with the problems of abnormal bleeding and clotting. Dr. Salzman seeks to further delineate the role of blood platelets in the events of clot formation and to examine the clinical phenomena of abnormal bleeding and clotting, particularly in cardiovascular disease.



Dr. Blumgart



Dr. Finland



Dr. Thorne



Harvard Medical Alumni Association
25 Shattuck Street
Boston, Massachusetts 02115

NON-PROFIT
ORGANIZATION
U. S. POSTAGE
PAID
Permit No. 19
Burlington, Vt.



Weariness "without cause"

*Psychic tension with
depressive symptomatology?*

"For weeks I've done practically nothing and I'm always tired. I wake up tired and I go to bed tired. It's absurd. It's really absurd."

When the patient complains of fatigue, and you can find no organic cause, you recognize that it may serve her as a means of avoiding responsibilities or facing an emotional problem. It is, in effect, a psychological retreat behind a somatic cover of continuous fatigue—one of the many depressive symptoms often associated with psychic tension.

She needs counsel and reassurance, and perhaps a tranquilizer to attenuate excessive tension and help restore the capacity to cope. As an aid to successful management, consider the value of Valium® (diazepam). As psychic tension is eased by Valium therapy, secondary depressive symptoms too may subside. The patient feels more capable, therefore more hopeful; better able to handle situations of intense stress.

Before prescribing Valium (diazepam), consult complete product information; a summary follows:

Indications: Tension and anxiety states; somatic complaints which are concomitants of emotional factors; psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation; acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in: skeletal muscle spasm due to reflex spasm to local pathology, spasticity caused by upper motor neuron disorders; athetosis, stiff-man syndrome, convulsive disorders (not for sole therapy).

Contraindications: Known hypersensitivity to drug; children under 6 months of age; acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: Not of value in treatment of psychotic patients, and should not be employed in lieu of appropriate treatment. As with most CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increase in dosage of standard anticonvulsant medication; abrupt withdrawal in such cases may also be associated with temporary increase in frequency and/or severity of seizures. Advise patients against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms (similar to those with barbiturates and alcohol) have occurred following abrupt discontinuance. Keep addiction-prone individuals (such as drug addicts or alcoholics) under careful surveillance because of their predisposition to habituation and dependence. Use of any drug in pregnancy, lactation or in women of childbearing age requires that potential benefit be weighed against possible hazard.

Precautions: If combined with other psychotropics or anticonvulsants, carefully consider individual pharmacologic effects—particularly with known compounds which may potentiate action of Valium, such as pheno-

thiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants. Employ usual precautions in the severely depressed or in those with latent depression; suicidal tendencies may be present and protective measures necessary. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation (initially 2 to 2½ mg once or twice daily, increasing gradually as needed or tolerated).

Adverse Reactions: Side effects most commonly reported: drowsiness, fatigue and ataxia. Infrequently encountered: confusion, constipation, depression, diplopia, dysarthria, headache, hypotension, incontinence, jaundice, changes in libido, nausea, changes in salivation, skin rash, slurred speech, tremor, urinary retention, vertigo and blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances and stimulation have been reported; should these occur, use of the drug should be discontinued. Because of isolated reports of neutropenia and jaundice, periodic blood counts and liver function tests are advisable during long-term therapy. Minor changes in EEG patterns (low-voltage fast activity) observed during and after therapy and are of no known significance.

Dosage: Individualize for maximum beneficial effect.

Adults: Tension, anxiety and psychoneurotic states, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d.; adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. **Geriatric or debilitated patients:** 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) **Children:** 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

Supplied: Valium® (diazepam) Tablets, 2 mg, 5 mg, and 10 mg; bottles of 50, 100 and 500.



Roche
LABORATORIES

Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110

Valium® (diazepam)

helps relieve psychic tension with associated depressive symptoms